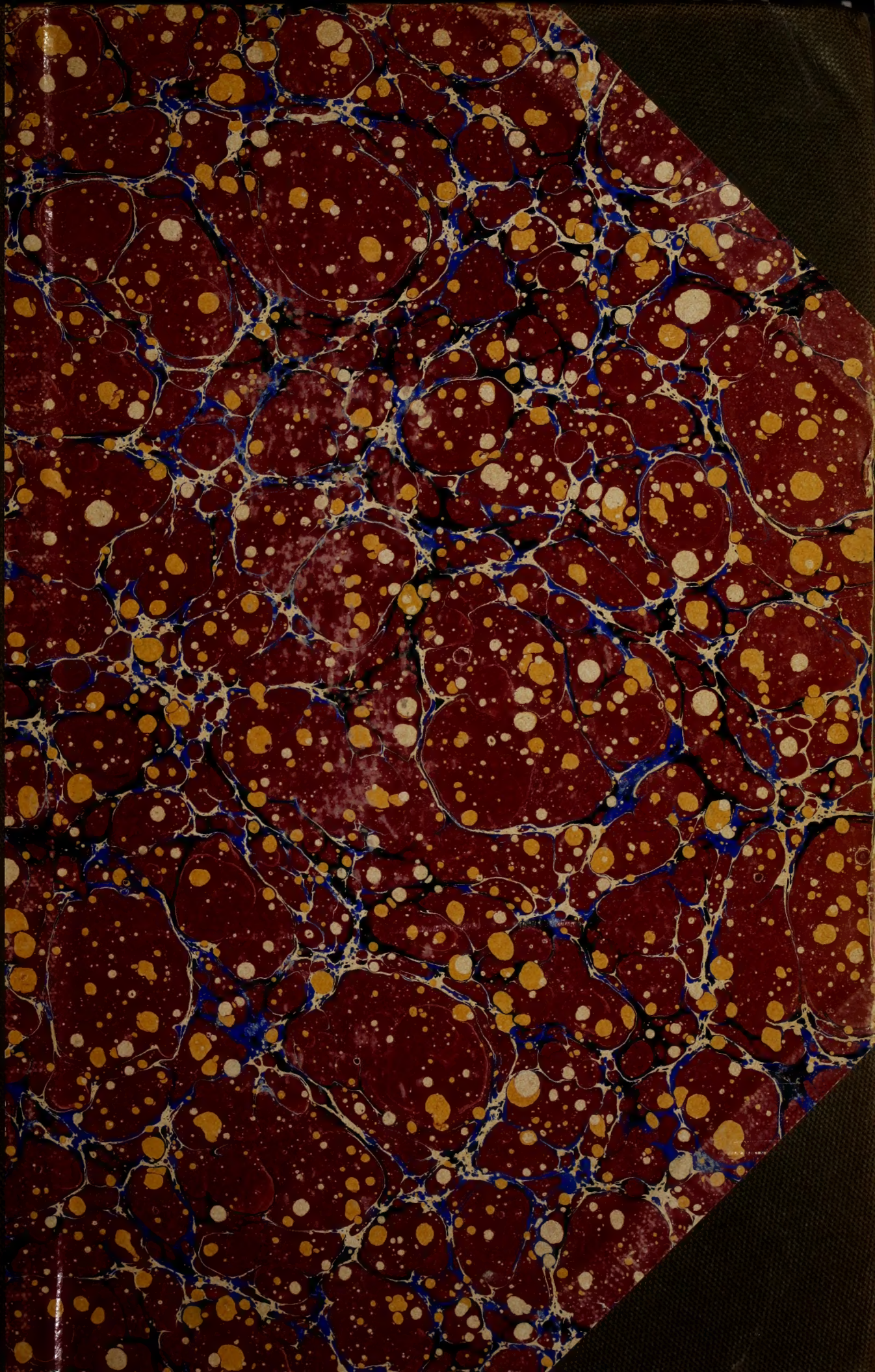

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Vol. 3—No. 1 San Francisco, Cal., June, 1910 Price 20 Cents

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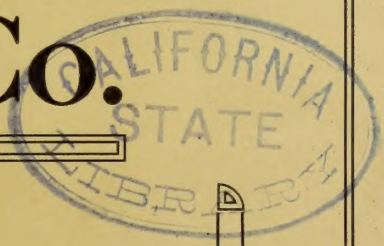

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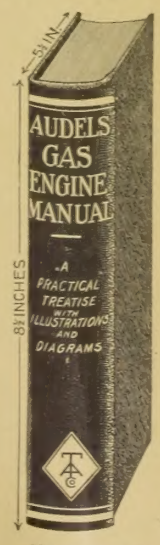

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THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 3 | San Francisco, Cal., June, 1910 | No. 1

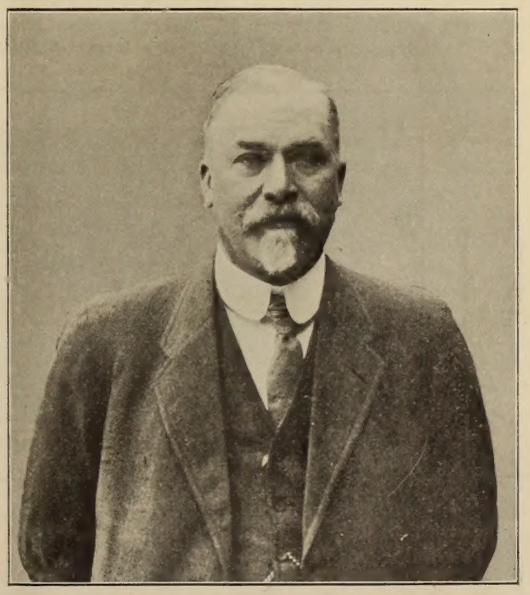
WATER IN OIL—SECOND PAPER

BY DR. EDMOND O'NEILL

Water may be separated from oil in a number of ways. This separation may be carried out to a certain degree by merely allowing the oil to settle. The water being heavier than the oil, falls to the bottom. The rapidity of this separation varies according to the viscosity of the oil and to the physical condition of the oil and water. The less viscous the oil, the more rapid the settling. The more intimate the mixture of the oil and water, in other words, the finer and more complete the emulsion, the slower the separation. This method, while in some cases it gives a fairly complete settling, in other cases may take years to give any appreciable separation.

Lessening the viscosity of the oil hastens the settling. This may be affected by heat, thus rendering the oil thinner; or by adding some liquid that contains no water and will mix with the oil and not with the water. Several such liquids have been proposed, gasolene, kerosene, turpentine, benzol, benzine, toluol, xylol, absolute alcohol, carbon bisulphide, carbon tetra chloride, acetone, ether, and many others. All these liquids cannot be used in every case, as some crude oils contain constituents that are insoluble and hence are precipitated, giving an emulsified mass that frequently contains the water in a more non-resolvable form than in the original crude oil. The acqueous, apparently semi-solid masses are often referred to as B. S. It must also be remembered that some of these liquids are heavier than water and therefore if they are added beyond a certain percentage the resultant liquid will be heavier than water and consequently the water cannot settle out. It may even float.

The separating out of the water from oil by thinning solvents, such as gasoline and carbon bisulphide, may not be complete in all cases, for the reason that in some cases the emulsion is not a minute drop of water surrounded by an envelope or skin of oil, but is a drop of oil surrounded by an envelope of water. Gasoline or other oil solvents will therefore not dissolve the skin, the water globules will remain separated, the emulsion will not be destroyed and the water will not separate out. The addition of liquids which will wet both oil and water, such as alcohol, will break up the emulsion, but of course some of the alcohol will go into solution with the water, increasing its volume. Nor can this increase in volume be accurately determined, for some of the alcohol will go into solution in the oil. This division of solution depends on so many factors that it cannot be used for quantitative purposes.



DR. EDMOND O'NEILL
Dean of Chemistry, University of California

The water skin may also be broken by the addition of salts, such as calcium chloride and many others, but here again the volume of the separated water will be altered and hence this method cannot be used quantitatively.

If, however, a proper solvent has been added that will thin the oil sufficiently and break up the emulsion, then in time the heavier water will separate out and settle to the bottom. This differential action of gravity may be hastened by centrifugalizing. This is a subject about which much might be written. Many experiments along this line have been made, but this is not the place to describe them. It

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has been made to work successfully in small scale work, but is not yet perfected for large masses and continuous service for all kinds of California petroleums.

Another method of attacking the problem has been by the use of electricity. We have said that the water is in the form of minute globules. If these globules are charged with electricity they have a tendency to be attracted to one another and form large masses that easily separate out. Like in the case of centrifugalizing, it is a very promising method and excellent results have been obtained in many cases.

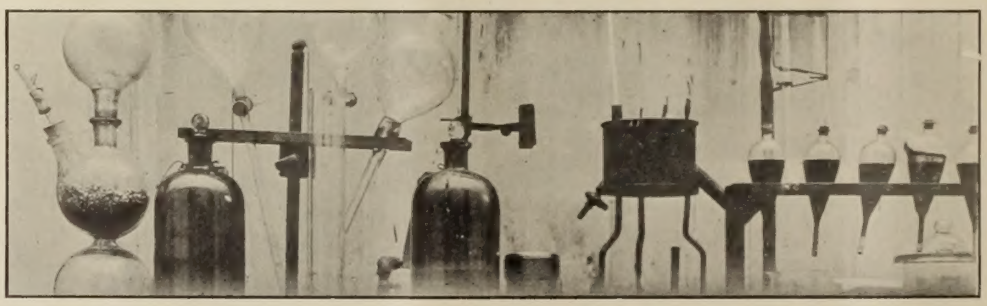
Another method of separating water from oil is by distillation. If water be heated above 100 degrees Centigrade (212 degrees Fahrenheit), at ordinary atmospheric pressure, it will be converted into steam, and will be distilled off. If the pressure is increased the temperature necessary to convert it into steam will be higher. Water in the emulsified condition is under pressure, due to stretched elastic fibres of oil around each globule. Therefore it may be necessary to heat the mixture above 100 degrees Centigrade before it will boil. The moment the pressure of the confined steam in each little oil envelope rises to a point sufficient to break it there will be a miniature boiler explosion. This explains the trouble encountered in distilling these emulsified oils, where the flask or the still begins to puke and in a few moments may be almost emptied.

When the distillation method of removing water from petroleum is applied to petroleum that contains constituents boiling at a lower temperature than 212 degrees Fahrenheit, their constituents are also distilled off, and of course should be saved by condensation. Ordinarily the heat of condensation is lost, the condensed water being thrown away. By the use of multiple effects much of this heat may be saved and this method can be used very economically. A further saving can be effected by distilling under diminished pressure, as the temperature necessary to convert the water into steam is consequently much lowered.

Another method whereby the oil and water emulsion may be destroyed is by freezing. When water is converted into ice it expands and this expansion breaks up the oil envelope. As this oil envelope is not rigid, being more or less elastic, several alternate thawings and freezings are sometimes necessary to completely affect the separation. If the temperature is lowered sufficiently to convert the oil into a solid, the rupture of the envelope is complete and the separation of the oil and water takes place perfectly on thawing. This solidifying temperature is frequently very low, but can easily be attained by the use of liquid air.

Other methods have been proposed, but these will suffice to give one an idea of the problem and the various means that have been used to solve it.

The problem naturally resolves itself into two phases: one for large scale work, to furnish a water free fuel oil, the advantages of which have been pointed out; the other is to devise a small scale method to ascertain the amount of water in a given sample of oil. In other words, to devise a method for the accurate quantitative determination of water in crude petroleum that will be applicable under all circumstances, and that can be easily and expeditiously carried out. Such a method will be described at some later time.



Apparatus for Detecting Water in Oil in Dr. O'Neill's laboratory, University of California.

PREMIER OIL COMPANY.

Premier's well No. 21 has come in and is good for fully 450 barrels per day, according to advices received here from our Coalinga correspondent. It has been variously stated that this well was doing 300 barrels per day, 1,500 barrels, and other numbers of barrels; but the truth is that it is good for 450 barrels of oil at the present time which, considering the grade produced, is plenty good enough. Well No. 21 is the 12th producing well on the property. Well No. 22 is nearing completion. Work on well No. 23 is progressing favorably. Three new wells are to be drilled along Derrick Row, on the east side of the property and one on the south line. At present Premier is working for a monthly production of 100,000 barrels, and ultimately, it is said, it is hoped to bring the production up to 2,000,000 barrels a year. The entire 160 acres of the Premier's property, which is surrounded by the American Petroleum Company, the K. & O. Co., the Claremont Oil Company and the Traders Oil Company, is level and it is considered that the oil measures lie in a blanket formation extending over the entire property. The regular monthly one per cent dividend for May has been sent out to all stockholders, and those for June will be dispatched soon. The San Francisco Chronicle says that the June dividend may amount to 2 per cent. At present the company has 70,000 barrels of oil in storage with the Producers' Agency.

EXPORTS FOR APRIL, 1909 AND 1910.

The following table exhibits the total exports of petroleum and the various products for April, 1910, and April, 1909:

	Gallons.	Dollars.
Crude.		
April, 1910	8,276,912	308,158
April, 1909	12,176,893	460,527
Decrease	3,899,981	152,369
Naptha.		
April, 1910	7,285,588	531,587
April, 1909	10,404,774	805,917
Decrease	3,119,186	274,330

Illuminating.		
April, 1910	75,435,336	4,557,383
April, 1909	85,361,326	5,776,067
Decrease	9,925,990	1,218,684
Lubricating and Paraffine.		
April, 1910	11,272,597	1,459,258
April, 1909	13,944,599	1,587,765
Decrease	2,672,002	128,507
Residuum.		
April, 1910	11,768,489	368,437
April, 1909	15,211,278	535,235
Decrease	3,442,789	166,798
Total Mineral Oils.		
April, 1910	114,038,922	7,224,823
April, 1909	137,098,870	9,165,511
Decrease	23,059,948	1,939,688

The following table exhibits the exports of the various classifications of petroleum for the ten months ending April 30, this year and last:

	Gallons.	Dollars.
Crude.		
1910	101,320,672	3,123,347
1909	98,456,216	4,287,891
Difference	3,864,456	1,164,544
Naptha.		
1910	46,683,798	3,607,706
1909	43,675,340	4,014,603
Difference	3,008,458	316,897
Illuminating.		
1910	827,985,956	51,710,289
1909	901,382,738	59,351,676
Decrease	73,396,882	7,641,387
Lubricating and Paraffine.		
1910	136,225,495	16,573,962
1909	119,865,515	14,798,062
Increase	16,359,980	1,775,900
Residuum.		
1910	97,202,029	3,310,333
1909	78,542,343	2,797,554
Increase	18,659,686	512,779
Total Mineral Oils.		
1910	1,209,417,950	78,325,637
1909	1,241,922,152	85,249,786
Decrease	32,504,202	6,924,149

AIR COMPRESSOR HAS PECULIAR EFFECT.

The Peerless, at Kern River, which has installed a large air compressor and gas plant, has been able to do away with the necessity of the latter by the operation of the former. The production has been largely increased by use of the compressor, and upon removal of the fluid in the holes, a flow of gas, sufficient to operate the entire plant, has been started. The gas generating equipment is designed to generate gas for operating purposes, from a percentage of the fuel oil being obtained. Under the circumstances there is no necessity for tne gas plant at all. The compressor first forces a large additional flow and then, seemingly of its own volition, comes the gas to continue operations.

PRODUCTION, DRILLING AND STORAGE FIGURES FOR APRIL, 1910.

The following table shows the month's production:

	Barrels.
San Joaquin Valley.	
Coalinga	1,555,561
Kern River	1,048,000
Maricopa	1,400,000
Midway	671,000
McKittrick	438,000
Total	5,112,561
Coast Fields.	
Santa Maria, Lompoc, Cat Canyon	626,000
Edna (Arroyo Grande)	1,000
Watsonville-Sargents	1,500
Summerland	6,000
Total	634,500
Southern Fields.	
Fullerton (Olinda, Brea Canyon, Puente)	406,000
Whittier	75,000
Coyotes	39,000
Salt Lake-Sherman	269,000
Newhall	10,000
Los Angeles City	38,575
Ventura County	38,000
Total	875,575
Total production of all fields for month	6,622,636

Total storage south of Tehachapi in field and marketing tanks 500,000 barrels. All railroad tanks are full to the limit.

Coalinga's shipments were the largest in the history of the field—1,746,299 in April, as compared with 1,697,110 in March. The shipments, 729,996 from the East Side were handled almost entirely by the Standard, and 1,016,303 from the West Side, divided between Independents, Associated and K. T. O.

Stocks held by the various, pipe line companies in the San Joaquin Valley on April 30th were 16,000,000 barrels; field stocks were 3,000,000. To this may be added 500,000 barrels for the coast and South. The total visible supply of crude in the hands of the producers and marketers to-day is between 22½ and 23 million barrels; that in the hands of the consumers is distinct and includes whatever the Standard may have on hand at the Point Richmond refinery, this being a consumer. The railroads, gas and electric companies, etc., are the largest consumers. The report of R. W. Dallas, secretary of the Coalinga Agency, shows 632 wells producing, one more than in March, with a production of 1,555,561 barrels, a decrease of 81,502 from March, accounted for partially by there being one less day in April, and the settling down of several of the new wells to a steady production. The storage was decreased by 190,738 barrels, leaving 719,981 barrels in tanks and sump holes.

MASCOT WILL INCREASE PRODUCTION.

The Mascot Oil Company, which is now producing approximately 80,000 barrels of oil per month, is drilling new wells to bring the total up to 100,000 barrels. Well No. 25 is still being drilled to the second sands, known as the "Lakeview Gusher" sands, in the hope of getting a doubly large production. The management expects to encounter these at a depth of about 2,500 feet. The Mascot is in an enviable financial condition at the present time. In case they strike the big sands, however, they will be doubly well off, as their present production is entirely from the upper strata, and they will have a double lease of life.

BRITISH CORPORATION MAKES ANNUAL REPORT.

California Oilfield's, Ltd., Had Excellent Business Year. Results More Than Satisfactory.

The ninth annual meeting of the share-holders of the California Oilfields, Limited, was held early last month at Winchester House, East Cheap, London, Mr. Robert Balfour, M. P., presiding. In brief, taking the minutes direct from the Petroleum Review, of London, the magazine which gave out the authorized statement, the report showed the following in regard to the condition of the California Oilfields, Ltd.:

Profit for the year 1909, £177,273, Os, 5d., or close on to a million dollars.

Gain over the profit for 1908, about £23,000.

An interim dividend of 10%, free of income tax, was paid in October last.

Total amount of debentures paid in fulfillment of the debenture trust deed to December 31st, £40,000.

Former reserve account, £50,000.

Reserve account at present, £70,000.

Increase in reserve account, £20,000.

Dividend declared by the directors at meeting, 25%.

Total dividend on capitalization during fiscal year, 35%.

Total oil production for 1909, 4,378,464.04 barrels.

Total production for 1908, 3,563,678.77, gain, nearly 815,000 barrels.

Total production for 1907, 3,342,942.44; gain, nearly 1,036,000 barrels.

Total production for 1906, 2,512,654.58; gain, nearly 1,866,000 barrels.

These figures are given merely to show the growth and development in the last four years.

Operating profit is really given as smaller for 1909 than is the case, as some operating expenses for 1908 were written off of it.

Number of wells producing, 1908, 73.

Number of wells producing December 31st, 1909, 82.

Number of wells drilling and undergoing repairs December 31st, 1909, 16.

The report then gave a detailed statement of the observations of an interested visitor to their property, who called attention to all its points of excellence, which are many, and made suggestions of worth. The production of the Coalinga field for 1909, 1908, 1907, 1906, the production of all California for those years, shipments of oil to foreign ports, adoption of oil for use by the British Navy, prices received for oil at various times and the excellence of the present condition of the company were also brought out in the report read by Mr. Balfour.

The report did not state anything in regard to the resumption of the contract with the Standard Oil Company, and this is taken in evidence that the contract has been renewed and that the company will not go into the refining business in opposition to the Octopus, as has been variously rumored and stated sporadically since Christmas last. The report expressed the view that the thanks of the stockholders were due their general agents for their services and to their management and staff in California for the satisfactory results which were then being submitted to the stockholders .Resolutions were made requesting especial information in regard to the handling of the company, which so far has not been made known. It was stated that it was not deemed advisable to give out for publication any information which could be of no possible use to those who requested it and which could be a great hindrance to the managers of the company in California. The question was not then pressed and the report was unanimously adopted. The re-election of Mr. J. S. Harmood Banner as a director, and the appointment of Messrs. Price, Waterhouse and Company as auditors, concluded the meeting. The usual discretion of the British company was more than shown in this report which, while telling all that is necessary for the stockholders to know, nevertheless allows no secrets which might be of material benefit to competitors to be spread broadcast.

RAPID EXPANSION IN OIL TRADE.

United States Geological Survey Report on Shipments from United States to Its Uncontiguous Territories.

The following is the total value of shipments of petroleum and its by-products from the United States to its territories during 1901-1909, tabulated by the United States geological survey:

	Alaska	Hawaii	Porto Rico	Philippines	Total
Crude	917,540	5,661,315	3,664	1,778	6,584,297
Refined 1,669,847		2,559,542	1,852,694	4,919,736	11,001,819
Paraffine ..	23	587	2,311	188,106	191,027

The shipments of petroleum crude and refined, to the noncontiguous territories of the United States present a remarkable instance of rapid expansion of trade. The exports in 1901 were valued at $200,000; they consisted of refined petroleum and went to Porto Rico and the Philippines; in 1909 the shipments were valued at over $3,000,000, and the total for the nine years was $17,586,000. The exports of crude petroleum were very small both to Porto Rico and to the Philippines. The case is quite different with Alaska and Hawaii. Beginning with a few hundred dollars in the half year 1902, the exports of crude petroleum to Alaska rose to $334,000 in 1909, the total for the eight years being over $900,000, while the shipments of crude to Hawaii were growing from $79,000 for six months of 1902 to $846,000 in 1909, with a total of $5,661,000 for the eight years. Unlike coal, which fell off 43 per cent in 1908, crude petroleum shipments increased in 1908 about 35 per cent over 1907. The shipments to Hawaii rose from $582,000 in 1907 to $802,000 in 1908. The use of crude oil as fuel is, doubtless, the explanation of this rapid growth in the export. The refined oil trade shows a like expansion. The shipments to Alaska were valued at $50,000 for the half year in 1902 and rose to $259,000 in 1909, with a total of $1,670,000. The exports to Hawaii rose from $103,000 in the half year 1902 to $506,000 in 1909, with a total of $2,559,000. Porto Rico, beginning a year earlier, received refined oil valued at $100,000 in 1901, and at $389,000 in 1909, with a total value of $1,852,000; and the Philippines paid $120,000 for their refined oil from the United States in 1901 and $664,000 in 1909, a total of $4,920,000 for the nine years. The shipments to all the possessions increased from 1907 to 1908, and continued to increase in 1909 for all except the Philippines, where the decline was nearly $400,000.

The shipments of paraffine to Alaska and Hawaii have been nominal. They have declined in Porto Rico from $292 in 1903 to $95 in 1909; but, with considerable fluctuation, they rose in the Philippines from $6,000 in 1903 to $33,000 in 1909, with a total of $188,000 for the seven years. The total value of shipments to all the territories was $191,000, whence it appears that the trade has thus far been almost wholly with the Philippines.

SECTION SIX OIL COMPANY.

Section Six has paid its regular one per cent dividend for May. At present the company has 21,000 barrels of oil in storage with the Producers Agency. The value of Section Six has been enhanced recently owing to the fact that the Pacific States Petroleum Company, on the same section, has come in with a good producer.

ENORMOUS GAS BELT.

Surpassing Any Other Gas-producing Section of the Known World, is Struck in Buena Vista Hills. Marvel of Scientific Oil Operators.

An enormous gas belt underlying all the west side country in the Buena Vista Hills district, has again been tapped by wells of both the Standard and Crandall-Matson companies. The pressure encountered is phenomenal. J. A. Pollar, the experienced Texas driller, who also drilled the wonderful Dos Bocas well in old Mexico, which caught fire and became a raging Hades, declares that the pressure which is exerted by the gas in these wells far surpasses anything in his experience of gas; the pressure exerted by the Honolulu Consolidated well is no less than 1,000 pounds to the square inch as it comes out of the pipe, as shown by the gauge, and Mr. Pollard estimates the flow at not less than 11,000,000 cubic feet per day. The Honolulu Oil Company first struck gas in their famous "gasser" on section 10. The pressure was 470 pounds and no one could overcome it until Mr. Pollard was sent for; upon his arrival he started drilling it with a rotary, controlling it completely. The well came in and was good for 500 barrels of 29 gravity oil per day. Several weeks ago this remarkable gas belt was struck in a well on section 14, the flow of gas exerting a pressure of 500 pounds, the greatest strike thus far being on section 4, township 32-24, Buena Vista Hills district. The gas is being used under the boilers of wells which are being drilled by the company. The Standard Oil Company has struck several great gas flows, the last and most powerful one, which is considered to be flowing at the rate of 16,000,000 feet per day, being on section 26, 32-24. The Lakeview has a powerful gas pressure, as can well be imagined, and so have all the other gushers in the Midway and West Side district. Readers of this magazine will recall a prediction made in the March number, that a great gas country was just about to be opened; and we quoted Mr. Fred Ripley, son of F. P. Ripley, president of the Santa Fe Railroad, as stating that he believed that the West Side covered a gas deposit enormous in extent. So great is the pressure in these wells that the bones of pre-historic, saurian and other kinds of monsters have been cast from them—often in bits, but at least recognizable. Geologists, would they but take the trouble and care, could find much of the utmost scientific interest were they to study the oil regions of the West Side of Kern County; for even the bones of the sabre-tooth tiger, and fossils of an extinct type have been vomited from these holes, and they are mute relics of a time of which only too little is known.

INDEPENDENTS BECOME ONE.

Elect Officers Upon Consolidating.

Doheney Joins.

As a result of the meeting of the stockholders and directors of the Independent Oil Producers' Agency at Bakersfield, held the latter part of May, a new board of directors, numbering 150 members, was named, final steps toward the consolidation of the Kern County and Coalinga Producers' Agencies were taken and a number of new members, including the American Petroleum, American Oilfields, Nevada Petroleum and Barneson interests were admitted to, or rather brought into the agency. The officers elected were as follows:

L. P. St. Clair, president, succeeding himself, election unanimous; S. W. Morshead, vice-president, election unanimous; W. B. Robb, secretary, H. H. Welch, treasurer, both unanimously elected. An Executive Committee of fifteen members was named, or one member to every ten companies who are members of the agency. The committee follows:

Kern River field: L. P. St. Clair, W. B. Robb, D. W. Carmichael; McKittrick: F. N. Schofield, H. U. Mayfield; Midway: E. L. Doheney, John Barneson, M. V. McQuigg, C. B. Wisner; Maricopa: W. L. Stewart, Clarence J. Berry; Coalinga: H. H. Welch, S. W. Morshead, M. L. Requa, S. A. Guiberson, Jr.

The stockholders' meeting was brief and after ascertaining the presence of a quorum, one representative from each of the 150 companies in the agency was elected a member of the Board of Directors. Resolutions prescribing the powers of the Executive Committee were adopted which placed the committee in almost full control and thus will obviate the necessity of more than one annual meeting of the 150 directors, unless in cases of extreme necessity. The resolutions are given in full at the conclusion of other reading matter in this notice.

Among the new members to join the agency were the great Doheney Companies, the American Oilfields, and American Petroleum companies. The Nevada Petroleum and California-Coalinga also joined at this meeting. On account of tneir strategic position it was very necessary to have them in the agency, and special terms were given these members in a contract which allows them from $0.45 to $0.50 per barrel, for a maximum from the Doheney companies of 250,000 barrels every three months at $0.50 per barrel. In case the agency price is higher, then the companies named will receive the excess. The contract extends for three years to come. Mr. St. Clair is quoted as saying that he believes that agency members will receive a higher price for oil within a short time than they do at present.

The proposition of the issuance of certificates for storage oil and the organization of a storage company are only awaiting the attention of the new Executive Committee, the president declared, and the disposition of these matters will be one of the first duties of the new board. Mr. St. Clair stated that the agency had 3,349,000 barrels stock but in order to advantageously do business it was necessary to have many times as much.

"Storage is a great factor," said the president, "and the company with the largest storage in the future will sell to the best advantage. Big companies would gladly pay 10 cents a barrel more than they are for oil if they could be sure of getting oil when they want it. One of the first questions asked is if you are sure that you can deliver in two years from now. If we have the oil above ground we can get the price for it.".

UNITED STATES GOVERNMENT INSTALLING OIL BURNING APPARATUS IN SMALL CRAFT.

Great Pacific Liners Using Oil as Fuel—Saving Effected.

It is said that a united movement is soon to be launched by the oil men of California to induce the United States Government to make more general use of petroleum as a fuel in the navy. They have been encouraged to this step by the recent action of the Government in ordering that all small craft of the navy that go to the yards for repairs be equipped with facilities for burning oil. The use of the California liquid coal to the extent that local operators say is practical would create a market for the product that would insure a steadiness of price and an era of vast development.

The navy department's discovery that oil is a practical fuel for the use of ocean-going steamships has not occasioned much excitement on the Pacific coast, for the reason that the merchant marine in this part of the world made the same discovery more than ten years ago and has been reap-

(Continued on page 13.)

MAKING OLD OIL WELLS SPOUT IN PENNSYLVANIA.

Dr. F. A. Monroe, of Jamestown, N. Y., has a method for reviving old, paraffin-sealed wells that is unique, and which bids fair to make "dead" wells as large producers as when they were first drilled, years and years ago. The doctor has an article in an Eastern scientific magazine which fully explains his remarkable device. Referring to the wells of his region, the author says:

"The great majority of wells are afflicted with paraffin wax, which sticks to the rock and closes the crevices and interstices and prevents the passage of oil. This has long been the bane of producers."

Proceeding, attention is given to the old method of overcoming the paraffin wax, that of blasting, which is condemned as crude, and not very satisfactory. It was recognized that hot steam would melt the wax and allow a resumption of the flow. This has been known for a long time and is the basis on which Dr. Monroe proceeded to work. The Doctor's device consists first of a metal tube twelve feet long and four and a quarter inches in diameter. In the upper part of this tube is inserted a cylinder containing water, with a small aperature at the bottom regulating the flow and distributing it evenly outside of a disc. In the lower part of the cylinder are inserted cast iron billets which have been heated white hot; the ends of the tubing are then plugged. At three points in the tubing, near the top, bottom and center, are rows of small holes. The water from the cylinder dropped onto the heated billets generates steam which is forced upward and out of these holes with great force, spraying the paraffin-coated walls of the shot-cavity with hot, dry steam.

The tubing and rods are then drawn from the well and is bailed dry. Boiling water is poured into the pocket below the shot-cavity until it is about half full. This water is poured in from the top and does not come in contact with the oil-bearing sand.

The steamer, already charged, is lowered into the well and allowed to remain, steaming the upper portion of the shot-cavity. Inasmuch as the steamer will continue to generate hot, superheated steam for from thirty-five to forty-five minutes, the whole cavity is filled with steam and the paraffin wax well started to running before the steamer is cool.

Before withdrawing the steamer is lowered so that the lower half, containing the heated billets, rests in the water which was put into the shot-cavity, bringing that to boiling point. The steamer is then withdrawn and another already charged and waiting is immediately lowered into the well. This operation is continued for from five to eight hours, until all the paraffin that has adhered to the walls of the shot-cavity has been melted and run down, and is held in suspension by the hot water in the pocket below the shot-cavity. The hot water and the paraffin are then bailed out before allowing them to cool, removing absolutely every bit of the paraffin that adhered to the well. The tubing and rods are cleaned and replaced, and any repairs to the pump or apparatus are made, leaving the well in perfect condition and making certain that the maximum flow of oil will be secured.

The article also says: "The average California oil is heavy and contains much asphalt. . . . Dr. Monroe shows that he can successfully cope with the asphalt evil also." The explanation follows:

The melting point of crude asphalt such as is held in solution by crude petroleum runs between 110 and 170 degrees Fahrenheit. At this temperature it has the same viscosity as oil and will melt and run freely. The steamer keeps the water in the pocket at a temperature of 120 to 180 degrees; that is, this temperature is found to exist in the bailings after the well has been steamed, and the actual temperature at the bottom is, therefore, necessarily much higher. This invention is of almost inestimable benefit to persons interested in oil and asphalt and may make material changes both in production and prices of both products in time.

LAND SALES OF RECENT DATE TOTAL MILLIONS.

Immediately after the appearance of the announcement of the sale, on May 20th, of the W. K. and Turner properties at Coalinga, to a London syndicate, Captain John Barneson, a stockholder in both companies, filed suit to enjoin the W. K. and Turner Oil Companies from carrying out the terms of sale as provided in the option granted to the English who were desirous of purchasing. The two holdings lie in section 2, Coalinga and comprise 662 acres. The first payment had been made, when suddenly, like a bolt out of a clear sky, came the legal action; and just as suddenly it was withdrawn again. The peculiar part of this whole business is that Captain Barneson, in his petition, alleged that the whole deal did not look right to him since his associates had accepted an offer much less than the one made by himself on behalf of other capital. If such was the case it seems peculiar that he should have been prevailed upon to withdraw his objections to the sale.

The west half of the southeast quarter of section 12, 11-21, fifteen miles east of the old Sunset field, patented land, has been purchased by J. B. Batz, George Hay and J. H. Gordon of the Bakersfield Abstract Co., for $50 per acre. This deal is considered as purely speculative.

The north half of the northwest quarter of section 25, 31-22, in the Midway field, which was recently sold to Fred C. Ripley and associates by the Visalia-Midway Oil Company, was purchased in Los Angeles a short time back, by the American Oilfields Company. Ripley and his associates secured the eighty acres for $1,500 an acre, paying $40,000 down. Their deal with the American Oilfields was on the basis of $2,000 an acre. They will receive $120,000 cash and the remaining $40,000 will be taken in bonds and stock of the big company. The increase in value since this land was purchased six weeks ago is therefore at the rate of 33 1-3%.

The Producers' Transportation Company have bought one hundred and fifty acres of land in the Grant tract west of San Luis Obispo for the purpose of establishing large storage grounds.

It is proposed to establish reservoirs of three million barrels capacity at this point and this will give the producers a storage capacity on the bay of six million barrels.

M. Donohoe, a capitalist of Butte, Montana, has sold 250 acres of land which he purchased ten years ago for $7,500 to the Balfour Guthrie Co., through P. M. Lansdale of Hoag & Lansdale, of San Francisco, for a sum reported to be $500,000, or, $2,000 an acre. The land is, as usual, in Midway, and, in the gusher belt. Its exact location is in 19, 31-23 and it is in the neighborhood of the Mays, Pioneer Midway and Santa Fe gusher properties. It is said that the terms enforced by the owner of the property were "spot cash" or cash and security.

One hundred and twenty acres of the northwest quarter of section 12, 29-27, west of the Kern River field is reported sold for $300 per acre to E. J. Seeley and associates. The land comprises the greater part of the Thos. J. Wells homestead and brings to its owner just $100 per acre more than it would have, had persons who held an option on it a short time ago exercised their optional rights. The territory is good prospective ground and will be developed in small subdivisions upon each of which will be an operating company, according to plans given out at the time of sale.

The west half of the east half of section 14, 32-23, just west of the town of Taft, has been purchased by another syndicate of Englishmen for $1100 per acre.

Englishmen are reported to be trying to secure the properties of the Monte Cristo Oil Company for a sum said to be $2,000,000.

The California Midway has purchased 60 acres of land from the Thirty-two Oil Company at $60,000 for the tract, or $1000 per acre. Transaction was cash, paid with a $60,000 check.

The Midway property of the well-known Mt. Diablo Oil Co. has been purchased by an English syndicate which conceals its identity, for a price of $1,500,000, of which $10,000 was paid as earnest money while the title is being searched, with the agreement that $240,000 was to follow when the abstract is completed, from which time the purchasers take over the property and receive the royalties, amounting to some 8,000 barrels per month. The land sold is all of section 26,32-23, adjoining 25 Hill, and including some of that famous knoll. It adjoins also the properties of the Mascot Oil Company, which has had another offer for its holdings there. Ten years ago section 26 was purchased for $2 an acre.

The north half of the southwest quarter of section 14, 32-23, has been purchased by the Union Oil Company, price not stated. The land lies next to the Regal lease, on which the Union lately brought in a 25,000-barrel well.

The Central Oil Company, owning 2200 acres in the richest part of the Whittier & Fullerton districts, is expecting to sell out entirely to an English syndicate for $3,000,000.

Crandall and Matson are reported to have purchased from R. W. Skinner the west half of the west half of section 18 32-25. The tract comprises 160 acres. The price is said to be $48,000, of which $16,000 has been paid, the balance being due in July. The land is patented.

Captain John Barneson has purchased 60 acres in the south half of section 13,31-32, North Midway, from A. R. Dabney, for $1000 per acre.

The northwest quarter of section 14,20-15, Coalinga, has been purchased by G. H. Umbsen of San Francisco from Peter Rice and associates of Fresno, for a price reported to be $60,000. Rice and associates are also reported to have been purchasers of the northwest quarter of section 30,19-15, Coalinga, known as the Schwinn holdings, at a price not made public.

RECENT GUSHERS.

The Union has three new gushers on the Sage lease, near Maricopa, in their wells numbers 5, 6 and 12. The wells are at present under control. Sage No. 6, which is the largest, and which is located in the southeast quarter of section 35, 12-24, has been for some time "drilling itself in." It blew out several times and sanded up. It will not be disturbed for the present.

The Eagle Creek, on section 31, 32-23, Midway, has a gusher in its No. 3, obtained at a depth of 1,552 feet. It is now good for 2,000 barrels per day. While this well is in action it completely stops the flow of the Santa Fe "2-6" gusher. Eagle Creek No 2 is still. producing between 500 and 600 barrels per day, pumping and flowing.

The Oil Development Co. on the McKittrick front is said to have a gusher finished at 1,150 feet, production not given. Gas pressure heavy.

Hale-McLeod No. 4, on section 5, 32-23, has come in gushing from a depth of 2,050 feet. This well is just west of the St. Lawrence, one of the first gushers in the Midway field.

The Union Oil Company has a new 25,000-barrel gusher in its Regal well on the southwest quarter of the northwest quarter of section 14, 32-23, obtained at a depth of 2,580 feet.

The sand was entered with 6-inch casing. The well has been capped and is under thorough control. Had it been obtained four or five months ago, it would have created great excitement; to-day it is scarcely spoken of.

Well No. 3, of the American Oilfields Co., is gushing 4,700 barrels of good oil daily, like an artesian water well. It is shallow, having been brought in at a depth of 1,085 feet. It is flowing with great steadiness and will in all probability continue a large well for a long time to come. This company has four wells in Midway which are flowing 7,000 barrels between them, daily. It has 100,000 barrels of oil in storage on its grounds.

Hawaiian No. 2, on section 32, 31-23, Buena Vista Hills district, came in during the middle of last month with an 800-barrel production of very high grade oil, per day.

DIVIDEND NOTES.

The Imperial Oil Company has paid a dividend of $5.00 per share on the capital stock of $100,000. This is the 69th dividend of the company and swells the total amount paid out to date to $2,500,000, on a capitalization of only $500,000.

The Empire has declared its first dividend of one per cent. The Empire's capitalization is $200,000. It is quoted in the neighborhood of $3.00 per share.

The $25,000,000 American Oilfields Co. will pay its first dividend, amounting to one-half of one per cent, next September, according to report.

It is said that the Lakeview Oil Company will declare its first dividend this month.

The Fullerton Oil Company is paying 10 per cent or $60,000 quarterly, its next payment being due this month. In the last ten years it has paid $344,000 in dividends.

The United Oil Company will pay a first dividend of one per cent on June 10th and will continue to pay that amount monthly thereafter. The United is said to be considering listing on the New York curb. It has excellent property in Midway.

The New Pennsylvania Petroleum Co., in the Santa Maria field, has declared its first dividend, of one per cent per month, payable June 15th.

Dividends for May were: $1,326,626.62, very close to the record.

It is said that the Yellowstone Oil Company will soon pay a dividend. The Yellowstone has about 20,000 barrels of oil in storage with the Independent Producers Agency, and wells on its various leases are just about ready to come in, and has steadily producing wells which assure a steady income.

GENERAL NOTES.

We hear that the Mexican Petroleum Company will pipe oil from the Huasteca and Ebano wells to Tampico, Mexico, by July 1st. The distance is about 100 miles. The line's capacity will be 28,000 barrels daily. Some 250,000 barrels of oil was sold by the company in April, according to a report which purports to come from E. L. Doheney, of the company.

The Los Angeles Gas & Electric Company is said to be considering going into the oil-producing business for itself, in the near future. This company now uses about 1,500 barrels of oil daily and is constantly increasing its capacity. It is rumored that Mrs. E. A. Summers, of Los Angeles, has made a long term contract with the company to supply them with fuel at from ninety cents to one dollar per barrel.

Colonel J. H. Galey, famous as an oil operator in Louisiana and Texas, is said to have entered the California fields with the intention of starting a big refinery. He is said to have leased 900 acres in Ventura County on a one-eighth royalty basis, for twenty years.

The Paula Oil Company has contracted 300,000 barrels of its Midway oil to the Standard Oil Company at 50c per barrel. The Paula is located on 23, 32-23, Midway, and also has 160 acres in Santa Paula canyon.

A well producing 30 gravity oil has been brought in by Messrs. Lapp and Gifford at a depth of 1,400 feet, in Grimes Canyon, Bardsdale, Ventura Co. The well is good for about 50 barrels per day, according to present advices. It sells for a price between $1.00 and $1.25 per barrel, in Los Angeles, and goes to the Union Oil Company.

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"OVER-PRODUCTION."

It seems hardly worth while to dignify this canting phrase with which the "big fellows" of S. O. brand are striving to break the market, with mention in these columns. But, since it is being constantly heard, we feel that we must mention it, ridiculous though it is, and in a way explain why the intelligent are one in declaring that this piling up in stocks is a matter, at the utmost, of the most temporary concern. It would almost seem to require no comment; it is so absurdly simple on the face of it. Even if it were to be admitted that the near future might see a reduction of the price at the well, which is possible, as all things are, we hold it to be absolutely impossible for any combination of circumstances other than an intervention of providence itself, to keep the price down. Yet, granting that the price were to be reduced as much as one-half (an utter impossibility); at the then current price producers could make money, and make it rapidly; more rapidly than the majority of persons engaged in other businesses.

While this dropping out of the bottom of the market price of oil is impossible, it is nevertheless being charged that it will happen. Let's consider, for a moment, the somewhat devious appearing but nevertheless not impenetrable way of High Finance.

In case there were a very short period at which the prices of oil at the well were forced lower by bearish tendencies of a concerted nature, what would be the result? This: the big fellows would come out smilingly on top; the poor "small-fry" would be squeezed to the wall; small stockholders would probably be scared into selling their holdings, which is just the action desired by gentlemen of the S. O. stripe, and a firm hold could then be secured by the higher-ups upon many a company which is at present in an absolutely unassailable position. One by one they could be gathered in. And immediately upon the completion of the plucking of the fledgelings prices would soar up above the dollar mark for the poorest kind of fuel oil, and as usual, the people, who always do get the heavy end and light return, would be separated, mulcted, or whatever other graceful term you choose to use, out of their entire savings, represented by their stock. And that is the situation in a nutshell:

Start a calamity howl, shear the scared "small-fry" and then enjoy the large and due returns for your labor; simple as day, isn't it?

As long as was possible to knock the enterprises and the oil fields of California by every kind of insidious insinuation, our little esteemed contemporary of Oil City continued to libel California as a poor excuse for an oil producing state. Even when the great gushers began to come in their production was consistently under-estimated by the (?!!?) profoundly wise Eastern writers for that paper. Again and again they howled and they knocked, as each new enterprise was being crowned with success until, with the printing of the news of the Lakeview gusher by every oil and scientific paper in Christendom, they suddenly turned tail and began the other cry "Over-production" in loud, calamitous, raucus screechings, which same they have continued ever since. The crudity and suddenness with which they made their change was laughable. How under the smiling sun these people can have the face to misrepresent continually as they have done, with their absurdly assumed asinine gravity, and hope to keep up any sort of faith in their publication at all, is beyond the ordinary man's comprehension. Perhaps, being in line with other policies of their backers it may be jammed through to success, but it is doubtful. However, oil men out here do not care whether or not these brilliant Easterners knock them, as they have a business which is absolutely independent of the toils of the St. Octopus; but it is nevertheless a matter to disgust the most callous to see the efforts of this Eastern paper to discredit anything which savors of independence, to note their avowed truckling subservience; and their continued policy of crying "wolf" will undoubtedly bring about a most pleasing lack of circulation of that machine-controlled, boss-ruled paper. Faugh!

VALUABLE TECHNICAL ARTICLES.

Until the present, or at least from the present time back for several years, there have appeared almost no scientific articles in any oil magazine on the Western coast, with the exception of the brilliant theses which have constantly appeared in the California Derrick, since the new management came into control.

Mr. Paul Prutzman, who is recognized almost the world over as a technical man of high standing and whose worth as an oil man is absolutely of the very highest kind, is in this number of our magazine giving his third paper in his series on "The Origin of Petroleum." It is needless to say that this is in reality a masterpiece of technically worked up logic—and a theory which, while it has been in a very crude way given out to the awaiting scientific world, is nevertheless practically new, as few people indeed knew of the works of that obscure geologist whose work Mr. Prutzman has so illuminatively elaborated and placed before savants. Mr. Prutzman is possessed of a marvelously discriptive pen, albeit he holds strictly to scientific matter in his writings and never lets literary technique interfere with that which he wishes to present. How he came by it is a matter which does not generally concern the world; but its value in showing up a subject is akin to a search light on a black night at sea, when, in the grim darkness ahead we know that there is something which should be sought out, but until the search light's strong rays are cast upon this object, we can but dimly grasp what that something is; when, in an instant, all is made plain. For descriptive power, what novelist can outrival the following passages (Paper One, Origin of Petroleum, Paul W. Prutzman, April Number of the California Derrick):

"Imagination can hardly picture the violence of the elements which must then have held sway, the clouds of steam torn by raging gales, the torrential downpour of rain, wrenching away the flinty rocks and rolling them in muddy floods to a sweltering ocean. How long this period lasted we have no means of knowing, and the millions of years of which the older geologists speak so glibly convey but a feeble idea of the enormous periods which must have elapsed before the earth had cooled sufficiently to permit the beginning of life."

This is but one passage among a hundred, yet, note the remarkable strength which the writer displays. There isn't a technical man in the country who can afford not to read Mr. Prutzman's articles as they appear in this magazine. A short time ago the Petroleum Review of London referred to Mr. Prutzman as the writer of a "brilliant series of articles in the Review upon California developments some years ago." And yet those articles were not one-half as interesting or as authoritative, or of as intense worth to the technical world

as the series which Mr. Prutzman is writing now for the California Derrick.

Every technical man in the State, all college professors, almost all chemists of whatever country, have heard of Professor Edmond O'Neill of Berkeley, Dean of Chemistry at the University of California, holder of numerous degrees and a generally liked and universally respected man. Dr. O'Neill has written very interestingly and with authority on "Water in Oil" for this magazine. Pipe line men appreciate the value of his series as do all practical oil men. Dr. O'Neill has conducted a special series of experiments in order to determine new ways and means for conducting oil, for separating water from oil and for the general betterment of conditions usually recognized as not very good, but which no one knew exactly how to better. And, the value of the chemist to the oil industry is hereby shown: Dr. O'Neill will present in his next paper remedies which are of a distinct and decided value to the oil man in the transportation of oil and elimination of water troubles. When scientists write for a magazine there is worth to that magazine. And, when the magazine is the oldest on the Pacific coast, as in this, it is safe to say that those who subscribe for the California Derrick get the best technical oil magazine to be had.

S. W. AND B. OIL COMPANY.

The S. W. and B. Oil Company, with a production of 18,000 barrels of oil per month has brought in another well which is good for 300 barrels per day. Development will not be curtailed on S. W. and B., as its managers believe that there will be a market for all they can produce, despite the cries of alarmists. The company is now earning enough to pay a dividend of 2 per cent per month, and it is said there will be a resumption of dividend payments in a short time.

BROKERS VISIT THE OILFIELDS.

A very enjoyable trip to the oil fields of the San Joaquin Valley was taken by a number of brokers, newspaper and stock exchange men of San Francisco during the latter part of May. In all, about 125 took the trip. They had a special train consisting of four sleepers and two diners, and traveled at their own pleasure. The first field visited was Coalinga. Here they were shown around royally and treated to a welcome which amazed them. On the following day they visited Maricopa and Taft, where they entertained the business men of the towns visited. A large photo of all the members was taken, showing them on both sides of the Lakeview gusher, which wonder they viewed for a considerable length of time. It was erupting, boiling and upheaving as usual when they arrived, but already there were a number of men laboring unceasingly, in what is believed will be the final effort, because the successful one, to control the flow of the oil geyser. The third and last day of the outing was spent in the Kern River field; all day long a string of autos ran unceasingly from Bakersfield to the scene of the operations of some of the most reliable wells in existence. Altogether, the receptions accorded the travelers were so very cordial that it was resolved to visit the fields next fall; and the trip was declared to be a huge success.

The California Derrick wishes to express thanks for the many kindnesses shown it by its various contemporaries in their support of its movement to bring the American Chemical Society's visiting members to the oil fields on this coming July. The management is pleased to announce that arrangements are being perfected which it is thought will allow the chemists to see the fields, and it believes that this is largely due to the interest and co-operation of the various oil publications of the State which so heartily supported the action taken by the California Derrick.

OIL IN SAN BENITO COUNTY.

Under the caption "Vallecitos Produces High Grade Oil," the San Francisco News Letter says: The Vallecitos District is attracting attention of late on account of the rich oil wells which have recently been developed, and other which are being developed. The district is located in San Benito county, about thirty-five miles south of Hollister.

This district is at present engaging the attention of oil men by reason of the high grade oil produced, being purely a refining oil, which contains large quantities of napthas, illuminants and lubricants. The formation of the soil consists of sandstone and shale in enormous quantities, and surface seepages are found in many places throughout the district. At present a number of companies are operating in this immediate section. The Snelling Oil Company has in operation a standard drilling rig, and is drilling to a depth of 2000 feet. This company has already pierced the first sand stratum at a depth of about 260 feet and produced a very high grade of refining oil. Other companies operating in this section are the Big Panoche Oil Company and the Alamo Oil Company, while other companies are preparing to begin active preparations in the immediate future. One distinctive feature of this district for oil development is the abundance of water and wood, and its accessibility to transportation facilities. The Union Oil Company some years ago found oil in this section at a depth of 750 feet. When the well was brought in it covered the derrick and all those employed about the place with oil. Since that time that company has been constantly acquiring interest until it has approximately acquired 8,000 acres in this district.

Some years ago Professor William Irelan, Jr., then State Mineralogist of California, an acknowledged geological expert, designated this particular section as one of the oil producing regions of the State, and in the light of subsequent events all of his then prognostications have been verified. He also at that time designated Kern and other sections as oil producing regions long before any well had ever been sunk in any of these districts, and their producing qualities are too well known to even require mention.

COALINGA PRODUCTION FOR MAY FALLS BEHIND APRIL.

Shipments of oil from Coalinga for May amount to 1,540,000 barrels, as against 1,746,299 in April; storage 740,450 barrels. Wells producing 626, suspended 90; drilling 163, suspended 51. These are advance figures, subject to correction. The total production figures will not be ready until the latter part of the month.

CRESCEUS OIL COMPANY.

The Cresceus, operating 40 acres in section 25, 32-23, on "25" hill in the Midway, is contemplating increasing its present production of 12,000 barrels per month to 15,000 barrels At present the company is earning one and one-half per cent per month on the capital stock of 340,000 shares. The Cresceus adjoins the Mascot, and is close to the largely producing wells of the Standard on section 30, in Midway. Cresceus has not yet struck the deep sands which underlie its property, and from which the Standard has obtained cuch big producers. The company is nevertheless in an excellent condition.

A tremendous amount of new capital can be expected to pour into the oil regions now that both northern and southern metropolises have visited Coalinga, and especially on account of the western tide which capital, the world over, is taking.

ORIGIN OF PETROLEUM—THIRD PAPER

By PAUL W. PRUTZMAN, of the California State Mining Bureau.

VARIOUS THEORIES.

The many theories which have, from time to time, been advanced to account for the origin of petroleum, may be broadly classed under three heads: the animal, the vegetable, and the mineral.

The theory of mineral origin assigns the production of petroleum to chemical reactions between water and various metals or metallic carbides, giving hydrogen and acetylene as a primary, and petroleum as a secondary product.

The theory of animal origin assumes that animal remains, collected in sedimentary strata and later subjected to heat, have been destructively distilled, thus giving rise to petroleum.

The theory of vegetable origin is similar, but argues that vegetation, woody fibre, or perhaps deposits of lignite, bituminous coal and peat, have furnished the raw material from which petroleum was distilled.

Now, in dwelling at length on one of these theories, and giving the others but a brief mention, it should not be taken that the writer considers his theory the only tenable one. On the contrary, considering the great chemical differences between different petroleums, and the diverse conditions under which they are found, it may be taken as highly probable that all the causes mentioned have contributed, in one place or another, to the formation of such deposits. In the present state of our knowledge regarding the bitumens, one is rash indeed who thinks that he can prove any theory relating to their origin. But the question offers a field for very interesting, even though unprofitable speculation, and while most of the theories have been discussed in a manner quite beyond my abilities, I believe that the one phase of the question to which the following matter is largely devoted has not received the attention to which the intrinsic merits of the hypothesis entitle it. I can say this, as the theory is not my own, but was originally (so far as I know) proposed in a paper by Mr. Wm. Plotts of Whittier, published in 1906.

"MINERAL" OR CHEMICAL ORIGIN.

Most of us are now familiar with calcium carbide, since it came into use as a portable source of lighting gas. This is a grayish, stony substance, formed by the action of a very high heat on a mixture of lime and coal or coke, and consisting of calcium (the metallic element of lime) and carbon. On contact with water, this substance is decomposed, the calcium uniting with a part of the water to form lime (calcium hydrate, $Ca(OH)2$, while the carbon unites with part of the hydrogen in the water to form acetylene ($C2H2$).

Free acetylene is a colorless gas. Chemically it is a very active substance, uniting with many of the metals to form explosive compounds, and undergoing some very remarkable condensation reactions (footnote-a-reactions in which two or more molecules or unit quantities of a substance unite to form a different and more complex substance.)

The mineral theory, in brief, is that the carbides of calcium, iron and perhaps other metals, are formed or exist in the heated portions of the earth's mass, and that these carbides are, by volcanic action, by fissuring, or by elevation and erosion, brought into contact with water, and thus decomposed into carbonates, forming acetylene, which is concurrently changed into the hydrocarbons of petroleum.

It would be rash to attack a hypothesis which has been supported by some very eminent chemists, but I must admit that this theory never appealed to me very strongly. While it is certain that conditions favorable to the formation of carbides exist in the under regions of the crust, we are reduced, on the score of quantities known to exist, to the carbides of iron and calcium as available raw materials, the other metals forming carbides being much too rare to account for the formation of the known deposits of petroleum.

The action of acids on cast iron, which contains a notable percentage of iron carbide, produces minute quantities of certain hydrocarbons which occur in petroleum, but iron carbides are apparently not decomposed by water at any temperature, and the presence of any sufficient quantity of free acid in the crust is very unlikely.

As to calcium carbide, while we may readily admit that acetylene might be formed in the manner indicated, I have never been able to find any clear statement of the reactions by which the characteristic petroleum hydrocarbons (paraffins and olefins) could be produced, with acetylene as a starting point. All the known condensation reactions of acetylene give rise to cyclic hydrocarbons (benzenes and other polymethylenes), and while paraffins and olefins may be readily converted, by heat reactions, into benzenes, no method is known by which this reaction can be reversed.

"ANIMAL" ORIGIN.

Fats, fatty oils and waxes are present in some quantity in all animal organisms. They are, in general terms, compounds of glycerine with certain bodies known as fatty acids, which resemble the fats themselves in appearance. By acting on fats with alkalis (soda, potash or lime) under suitable conditions, the glycerine is set free, and the fatty acid unites with the alkali to form a soap, for instance, common white soap is mainly a compound of soda with oleic and stearic acid. The soda and potash soaps are soluble in water, while lime (and many other) soaps are insoluble.

Destructive distillation is distillation which destroys the original substance and produces new substances. When water is heated it boils, and if the steam be condensed, it is water, the boiling having produced no chemical change. This is true of a great number of liquids and of some solid bodies. But when complex substances such as wood or bituminous coal are heated, they are broken down, giving products entirely different from the original material. Thus, wood when heated to redness in a retort gives off inflammable gas, and a distillate consisting mainly of water, acetic acid, alcohol, turpentines and numerous hydrocarbons, and leaves a residue of charcoal or carbon. None of these substances except a part of the water existed as such in the wood, and thus the distillation is destructive, i. e., the wood is destroyed to make new products.

Some bodies are largely destroyed if distilled alone, but may be distilled almost unchanged if superheated steam is passed through the retort in which they are being heated—this is true of the heavy mineral oils and some of the fatty acids.

By the destructive distillation of fats, fatty acids and soaps, distillates are obtained which contain many of the hydrocarbons found in petroleum, and while I do not know that anyone has actually produced from fats a product at all identical with any known crude oil, allowance should be made for conditions prevailing in the earth's depths which we cannot duplicate artificially. The tar remaining after the distillation of stearic acid with superheated steam is said to consist largely of olefins, and it is quite safe to assume that, could we duplicate natural conditions in the laboratory, we

would be able to convert fats or soaps completely into petroleum hydrocarbons.

The lower forms of animal life exist in great quantity in the warmer and shallower parts of the ocean. While animal fats are a much larger component of fishes and other highly organized forms of life than of shell-fish and the animalculae, it is probable that all forms of marine animal life contain some proportion of fat or wax. The supposition is that such animal residues, being buried in quantity in ocean bed, are in time submitted to destructive distillation (by processes to be detailed later), the product of this distillation being mainly petroleum.

The older forms of this theory, depending on the accumulation of sufficient quantities of fish, river animals and other highly organized forms, met the very natural objection that it was impossible to conceive of any natural process by which a large enough quantity of matter so subject to decay could be collected, and some of the older arguments in favor of this theory, such as finding shells completely filled with petroleum, were absurd in the extreme, it being apparently assumed that a shell-fish, consisting largely of water, had in some manner been converted into an equal bulk of petroleum. But when it became known that some of the minute marine organisms contain an appreciable amount of fat or wax, this difficulty disappeared. For while the muscular portions of animal bodies are extremely subject to decay, and when exposed to air and water completely disappear in a very short time, the fatty portions, on the contrary, are so resistant as to be called almost imperishable. And when we contemplate the cubic miles of limestones which the coral polyp has built in tropical waters by the accumulation of myriads of tiny lime secretions, and the masses of diatomaceous rocks which a similar organism has laid down on our own coasts, we can see that even allowing a very small proportion of fatty matter in such organisms, there is no discrepancy between the known deposits of petroleum, and this one source of supply, were no others available.

A very interesting modification of this theory has been proposed, which throws some light on the means by which sufficient masses of animal fats have been preserved in sedimentary strata. This suggestion is that free fats, liberated from animal matter by decay, are converted by the lime existing in all ocean water into lime soaps, or compound lime and ammonia soaps. These, being heavier then and insoluble in water, would settle to the bed of the ocean, and being mixed with the mud which builds up clay and shale strata, would be indefinitely preserved, being even less subject to decomposition than the fats themselves. If this formation of soaps is possible (and while it cannot be definitely proven it seems very plausible) the preservation of any quantity of animal fat in sedimentary strata becomes very simple.

(To be continued.)

ASSOCIATED OIL COMPANY.

Preliminary to being listed on the New York curb, the Associated filed a complete and comprehensive report showing the exact condition at the time. In this report the following was shown concerning the affairs of this branch of the Southern Pacific Railroad Company:

Amount of capitalization, $40,000,000; amount paid in dividends in the last eight years, per share, $6; total expenditures for all purposes, $8,445,987.50; land owned in fee, 13,932 acres; lands under lease, 6,652 acres; total lands, 20,585 acres. (Most of above lands are owned in Kern County.) Oil produced from 355 wells, in 1909, 7,114,796 barrels; oil marketed in 1909, 11,068,791 barrels; total marketed, including that purchased from other companies, 22,405,082 barrels; par value of shares of company is estimated at about, $22,500,000; profit for 12 months ending February 28th, last, $1,948,340.57; depreciation reserve carried, $751,075.95; accepted producing minimum of the company in Kern River, Coalinga and McKittrick, 605,850,000 barrels.

Present value of stock is considered to be at least worth one-half more than is being given, or about $75 per share. At present the company is transporting about 15,000 barrels per day from Coalinga to Monterey. The new tank steamer, the J. A. Chanslor, capacity 50,000 barrels, has arrived on the Pacific coast and is now doing duty. It is said that a sister ship of the Chanslor has been ordered for the company. A new pipe line from Tracy, Cal., extending into Nevada for a distance of 200 miles is now being planned and will soon be under construction.

(Continued from page 7.)

ing the benefits thereof ever since. In the early days of the use of liquid fuel it was confined to coasting craft. Then in 1900 the Oceanic Steamship Company converted the twin liners Alameda and Mariposa into oil burners and the shipping world sat up and took notice.

Even the navy department took notice and on one of the Mariposa's first voyages to Tahiti a navy engineer made the round trip on the liner. His report was an indorsement of oil as a practical fuel, but no action was taken on it until a year or so ago, when the coast defense steamer Cheyenne was converted into an oil burner for experimental purposes. The experiments made on the Cheyenne still further convinced the navy department and now all the smaller vessels that go to the navy yards for repairs are to be equipped with oil-burning apparatus.

When the Toyo Kisen Kaisha built its big turbine liners Tenyo Maru and Chiyo Maru they were equipped with oil burners. It was found, however, that coal could be bought in Japan cheaper than oil, but that oil was the cheaper fuel here. To take full advantage of this difference in conditions the new ships were equipped with convertible furnaces. They come from Japan burning coal and on the return voyage burn oil. At times they burn both. That is, some of the furnaces will be consuming coal while the others are being fed with oil. It was once supposed that an oil burner unable to get liquid fuel would be helpless. The Chiyo and Tenyo take whichever they can get, but their engineers say they prefer oil.

One of our contemporaries says that, according to dispatches the Cunard directors in ordering a new liner ranking with the Lusitania and Mauretania have been advised that by using oil fuel they would effect a saving of $60,000 every round trip.

The Lusitania consumes 5,500 tons of coal each trip to New York, which costs $29,440. She carries 132 firemen, whose wages represent $1,950. It is calculated that if oil is substituted she will require only 3,300 tons, costing $21,490, and but twenty-seven firemen, whose wages would be $155, or $21,665 in all.

The cash saved by using oil would be $5,755, but she would have additional earning power if the oil fuel could be carried in the double bottom, and the space occupied by the coal bunkers utilized for 5,500-ton cargo, at, say, $5 per ton, while 390 extra passengers at $5 each, estimate profit, would yield $2,500. Therefore, the company would have $35,755 on one trip from Liverpool to New York, though the cost of oil would mean a saving of only $24,440.

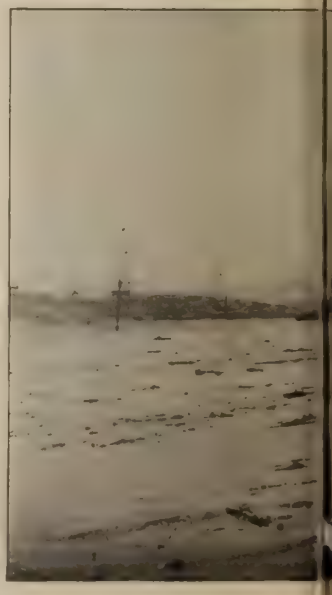
The Traders Oil Company, with properties in Kern River, Coalinga and Midway, producing 2,000 barrels per day, is said to be planning an average of one new well every week until its entire holdings have been drilled up. They have no fear of "overproduction."

LATEST PHOTOGRAPHIC MARVELS

The upper photograph shows the most recent view of the Lakeview Gusher, at close range. The oil issues from a crater seventy-five feet in diameter.

* * *

The center photograph shows thousands of feet of casing and oil well supplies, at Taft, California. Supply dealers have been unable to meet the demand for drilling materials.



A $10,000,000 Distributing Center for Oil Well Supplies

In the center view is seen the receiving freight yard at the new oil city of Taft. Every day thousands of dollars worth of goods are brought into this depot. Piled one on the other and extending for a large distance are seen several hundred thousand dollars worth of casing, i. e., iron pipe for use in wells, which have but recently arrived and which have doubtless been supplanted by other and newer material by this time. The Southern Pacific Railroad Company is realizing a fortune from its freightages to this central spot, the distributing point for many miles around for all oil supplies. Water sells for as high as $8.00 a barrel, not far from Taft. Other necessities for the sustenance of life and boring of wells cost in like proportion. At the beginning of the year it was estimated that about $7,500,000 would be expended in the Midway field with Taft as the sole distributing point for this vast amount, during the coming twelve months. Six months of that time have passed and it is doubtful if that amount has not been already expended, with development proceedings still at the high tide. Supplies continue to be rushed to this scene of the operations of the almost numberless new companies which have started developing their various holdings. Traders in oil well supplies such as are seen in this photograph have made individual fortunes reaching into the thousands.

OF THE CALIFORNIA OIL FIELDS.

Scenes in the Great Midway Oil Field

Kern County, California.

The Lakeview gusher has now passed its eighty-sixth day of continuous flowing, during which time it has produced just about four millions of barrels of oil. The size of this mammoth well is shown by a glance at the men seen working in the upper photograph, in the left-hand corner. Note the deserted house in the distance; no fires are allowed in the neighborhood. The great piece of timbers in the foreground serve to show the prodigious force which tore the "crib" apart and broke all restraint, just a short time back. The black crater is fully seventy-five feet across at the present time. The flood of oil, which rises in the center is muchmore steady than a geyser, and seems to run on the same principle. As can be seen, the whole region presents a scene of the utmost desolation. All restraints have been demolished.

The lower photograph shows the landscape on the other side of the gusher, the whole panorama being an oil-flooded district extending as far as the eye can reach, the oil streaming down steadily from the knoll where the crater belches. In this photo a ditch is being dug to intercept the flow and conduct the oil away to the huge storage reservoirs prepared for it. Our correspondent states that a large force of men is now employed in building a great levee composed of sacks filled up with sand thrown up from the depths, around the pool of oil formed in the crater. The pool formed is about seventy-five feet across and is thirty feet above the top of the hole. When the work is finished a giant float will be built and in some way anchored over the gushing stream. The experts seem to think that this will control the well at last; but it is problematical. The oil produced to date is worth nearly $2,000,000.

The lower photograph shows engineer L. C. Read, of the Union Oil Company, and his assistants, caring for the oil of the Lakeview. The reflecting surface in the foreground is oil.

Reported by
Special Field Representatives
of the
California Derrick

By Guy H. Salisbury.

[Correspondence from Coalinga, June 10, 1910.]

The San Francisco Stock Exchange excursion arrived ten minutes ahead of time on Saturday, May 28th, the first time an excursion train ever entered this camp on time. T. A. K. Fassett, of the General Passenger Department had the train in charge. The brokers arrived at 7:50 a. m., the Reception Committee received them and as soon as possible had them out over the field, where derricks loomed up like church steeples, to many of them. The day was not just the kind Coalinga offers her visitors, but the boys seemed well pleased. To some it was a revelation to see the black derricks over wells that were producing the brown gold that will go into dividends, and to listen to the merry rattle of the wire cable while the walking beam lifted and dropped the bit at the bottom of the hole, in an effort to bring in other producers, were lessons in the industry many a broker had never learned. To know that the field now producing extends 14 miles to the north, in width from one mile to three, that in a very few years more will extend, in some places, to six miles and eight miles in width, were facts of great interest. The supply houses and the machine shops, the look of permanence about the town, the two banks with over 3,000 depositors, all appealed to the thinking man, a study well worth the cost of the trip. The Barbecue was new to many; the mutton, beef and bull's head, cooked the old way, was partaken of an enjoyed. We feel that the members who graced our little city on this occasion went away well pleased with what they saw and learned.

The Esperanza Land & Oil Company are airing the internal troubles of the company in the courts. Mr. Evens, the new manager, through his attorney, T. C. West, of San Francisco, caused the arrest of A. D. Windsor, late legal advisor and secretary of the company, and Colonel Fred. E. Windsor, late manager, on the charge of embezzling the company's books; both gentlemen were released on bail; the trial comes on for hearing early in June. T. S. Minot, of San Francisco, attorney for the Windsors, will commence action in Los Angeles, before the United States Circuit Court, for an accounting, and the cancellation of certain leases made by Mr. Evens without authority. This has been brewing for some time. The Windsors are well known here and the case may be of interest to oil men generally.

There is some interest felt here in the action of some locators who have started work on land claim by the Kern Trading and Oil Company under a lease from the Southern Pacific Company. Two standard rigs have been started on the west half of section 5, 21-15, and one rig on the southeast quarter of section 7, 21-15. This will bring the question of title before the Federal Courts and the issue will be of great interest to the people of the State, and should settle for all time the railroad title under the grant they now hold, affecting valuable oil lands in this field .The hearing on the demurrer to the bill, in the cause entitled, Geo. D. Roberts et al, vs. the Southern Pacific Company et al., now before the United States Circuit Court, at Los Angeles, comes on for trial on June 27th, 1910. T. S. Minot, of San Francisco, represents Roberts et al.

The Consolidated Oil Company have again shut off the water sand, this time at 1,616 feet. Charles Spurling, manager, will prospect ahead and test each formation as the bit enters it; in doing so he will secure a very valuable log of the water sands that must be enocuntered in this locality. The bit is nearing the oil sand, the work is being watched and studied with great interest, not only by the oil men but by the geologists as well. This property is on section 18, 21-15.

The Union Oil Company has shut down the development work on its Southern Pacific lease on section 12, 20-14. It is claimed that the shut down is on account of the production the company now has in Midway, as soon as the production is cared for it is expected work will be resumed. On section 4, 20-15 the work will continue, as per contract with the locators.

The Producers' Transportation Company have been taking oil from Coalinga Station No. 1, thus relieving the stagnation in this field. The Union Oil Company, the sales company, will be able from now on to handle all of the Coalinga oil without interruption, as the company has provided for more storage for oil and many of the new contracts will soon be taking oil.

The Great Western Oil Company reports the last assessment all paid in on the 250,000 shares issued; the company now has sufficient funds to meet the outstanding indebtedness; the last payment on the property is due in December, arrangements will be made to meet the same.

The Acorn Oil Company are 2,326 feet deep with 5⅝-inch casing in well No. 1, section 2, 20-14. The formation has been brown shale, at present the bit is in blue shale with frequent gas pockets. The company are after the sand known as the "Home sand."

The Coalinga National Petroleum Company are 2,743 feet deep, have landed the 6¼-inch casing in blue shale, with 57 feet of nice oil sand the casing will now be perforated and the well will be put on the pump in a few days; the well was bailed down 700 feet and a strong showing of oil came up through the water.

The Coalinga Security Company are 2,500 feet deep with rotary; the well will be cased at about 2,700 feet with 8¼-inch casing, thus saving a string of 16-inch stove pipe, and a 12½-inch string and the 10-inch string. The well will be completed about July 2d, 1910.

The Crow Estate are hauling material for a full standard rig out to section 3, 23-16. The showing made by the Dominion well on section 7, 23-17 has stimulated confidence in that territory.

The Best Yet Oil Company are 1,610 feet deep with 10-inch casing in well No. 1, on section 18, 21-15, going nicely.

T. P. Andrews, foreman of the grand jury which indicted Messrs. Ruef and Schmitz, recently visited Coalinga. The motto of Coalinga is "Get Together." As Schmitz is in the oil business it only needs the following out of Coalinga's motto to bring them face to face once more!

FAMOUS SCENES IN COALINGA

"Derrick Row," the best known oil boulevard in the State of California. Along this oiled road lie properties as famous as the City of Coalinga itself.

Another view looking over the rich properties of the Premier Oil Company to the American Petroleum Company's holdings. The level stretch in the foreground is indicative of the underlying oil formations. These properties face Derrick Row.

Sump of the Premier Oil Company mirroring derricks of American Petroleum Company. The oil of both of these companies now goes to the agency. The Premier has 70,000 barrels of oil in storage at the present time.—See pages 4 and 7.

SANTA MARIA.

The Despatch, on the east end of the Ideal tract, is down 260 feet.

An option has been granted on the ten thousand-acre tract of the Bell Ranch for $300 per acre, a total valuation of $3,000,000. It is only a short time ago that this same land was selling at the price of $1.10 per acre, and that no less than 4,000 acres had to be sold to clear off the mortgages on a property now valued at over $3,000,000.

The Oil Refining and Producing Company has applied through its manager, L. A. Phillips, to the Board of Supervisors of San Luis Obispo County for a franchise to lay a pipe line over the Avila wharf. It is expected that the franchise will be granted.

Parties said to be affiliated with the Southern Pacific, who operated near Casmalia some months ago and closed down all operations, giving out their reason as a failure to secure oil, have now allowed it to become known that they own most all of the land around their original holdings, whereon they got a well good for 150 barrels of light oil daily.

The proposed sale of the properties of the Pinal did not go through, largely for the reason that the syndicate which held the option were not quite prepared to close the deal when their option expired and that although they offered a good bonus for an extension of thirty days, it was denied them and the whole deal was declared off. The owners of the Pinal saw that they had too good a proposition for there to be any delay.

The Union Oil Company is reported about to begin building a refinery on its properties near Avila. Union Bell number 4 is reported as doing over 600 barrels in twelve hours, and having a heavy gas pressure. Union Bell No. 5 is down 2,700 feet in a brown shale saturated with oil. Western Union is reported as deepening 38, now down below 4,100 feet. It is said that by deepening the management has secured double the former production. Western Union No. 40 is doing finely, producing something like 250 barrels per day. New Pennsylvania on the Fulger is being finished at a depth of 3,340 feet, with eight-inch casing. The drill has passed through excellent, thick, oil-bearing sands. Dome Blochman No. 2, which was put on the beam at a depth of 2,850 feet, has proved to be a great gusher. In addition to the large amount being produced from this well, the quality of the oil is extra fine, showing less than one-half of one per cent of sand. The well now equals the Palmer gusher. It is flowing a fortune, according to latest reports. The Palmer Annex has started work on wells No. 1 and 2. For information concerning the Palmer's new well, read under separate head, "Palmer Gets Another Gusher." There is a proposition on foot in San Luis Obispo to pipe natural gas from the Santa Maria field to San Luis Obispo, supplying neighboring towns along the line with it. This proposition is said to be meeting with hearty approval from all those who do not live in Santa Maria, where it does not enjoy the favor of the general public, which seems to believe that Santa Maria should use its own gas instead of allowing distant towns to utilize it.

We beg to thank the Santa Maria Graphic for a large amount of this information.

PALMER GETS ANOTHER GUSHER.

The Palmer Oil Company in the Santa Maria oil field has a large gusher, No. 2, which, while it came in several weeks ago, only started to gush on the 18th of May, before that time being a producer of about 250 barrels of fifteen gravity oil per day, rather low for the Santa Maria field. By actual measurement the well is flowing at the rate of 4,000 barrels of oil daily at the present time and all of the production is being saved. This was not the case when the first Palmer gusher came in as there were few facilities for caring for the oil and much of it rolled down the hillside in a thick stream and was lost. The oil sand was first encountered at a depth of about 2,000 feet and the well was finished at 2,860 feet, a shallow depth for this region, but necessitated by the heavy gas pressure encountered. There is very little sediment in the oil. It is said that the flow is increasing rather than diminishing. If the well turns out nearly as large a producer as Palmer No. 1 it will be far more profitable than that one, as all the oil can be cared for. It might be added however, that event with the large loss sustained by the Palmer backers in their first well, they have met with unusually good luck in their operations.

SUNSET-MIDWAY-McKITTRICK.

The American Oilfields Company's two new wells on section 36, 31-22 (Taft), both of which were finished with one string of casing at a depth of 940 feet, are doing about 1,000 barrels per day. They are considered as among the cheapest-finished and best-paying oil wells on record in this part of the country.

The Oil World prints in its issue of May 26th a little feature story which is rather clever in an oleaginous way. We give it in its entirety:

"Sight on View at Maricopa One Night."—Barry Hamilton declares that Monday night was the most spectacular in the history of the West Side since his advent. From his bungalow porch on section 22, 32-24, he reports seeing the big brush fire in the hills back of Maricopa, the blazing torch of the Standard's burning gas well on 26, 31-24, the comet with its new search-light tail and the moon in full eclipse, all at the same time; and further asserts that he could hear the dull rumble of the Lakeview gusher." All of the sights of this time of the year are, very evidently, not to be seen at the sea shore.

Shortly after nine o'clock on Friday night, the 20th of May, a well of the Standard Oil Company in the Benua Vista hills, known as No. 5, and located on section 26, 31-23, took fire following an explosion of gas which was encountered at a depth of 2,370 feet. Until the present writing all attempts to extinguish the towering flame have been crowned with unsuccess. The flame can be seen in Bakersfield, 50 miles away. This is the fifth well to enter this gas belt, which is pronounced by oil men of experience to be the most wonderful natural gas deposit known. The belt first became known when it was entered by the Honolulu Oil Company's famous "gasser," later a gusher, although Standard and other Honolulu wells have since tapped it. The gas is being utilized under the boilers and the Standard is piping it to their pumping station several miles off. The fire is a most spectacular sight, indeed.

The United on section, 6, 32-23, Taft, is getting 250 barrels of oil per day from well No. 5. Well No. 4 of the same company is still in the drilling.

Camps and rigs have been built by the Associated Oil Company on sections 22, 24 and 36 in section 30-23, and on section 5, 31-24, in the Elk Hills district, on all of which drilling will be immediately begun. A pumping plant is being installed near Buena Vista Lake and a water line will be laid from it to the scene of operations. This territory is estimated to be good at a depth of about 3,000 feet.

Honolulu No. 1 on section 10 is still flowing at regular intervals with great force, having recently ripped the roof off the receiving tank. The gas pressure is still heavy.

It is said that the Doheney Company, the American Oilfields, the Union and the new Refining and Producing Oil Company, but recently incorporated by the Crockers, J. L. Lamprecht, Yancey et al., have combined in a water deal whereby they will carry water to the McKittrick front, where

all of the parties are interested. The Oil World says: "A main line is being run to the front from the source of supply and two laterals will be run to the Southeast and two to the Northwest, these parallel lines being designed to serve two rows of sections traversing the country diagonally."

The Standard has controlled the terrific gas pressure which it met with in its well on section 22. It is drilling on sections 16, 22 and 31-23, near Taft.

Well No. 1 of the Honolulu Consolidated had to install a Fairbanks Morse type of pump to increase the pressure which is necessary to overcome the gas pressure.

The K. T. & O. will drill its holdings on section 5, 32-23, on account of the operations of the Alaska Pioneers, St. Lawrence and Hale-McLeod companies in the immediate vicinity. The K. T. & O. has finished up the following three wells on the north line of section 1, 11-24: Numbers 25, 26 and 27. Production unstated.

The big Santa Fe gusher on section 25, 31-22, in North Midway is still flowing by heads and likewise is producing largely. The well is all that it was reported to be.

Upon deepening, well No. 6 of the Section 25 Company is now flowing more than 300 barrels daily through the tubing. No. 30 on the same lease is flowing between the casing also and is making about half the production of No. 6.

News comes to us from Maricopa that Mr. Barry Hamilton has installed two hydraulic jacks at his new well on section 21, 32-24. A pump is being installed in the water well which will furnish water for the four wells now drilling on section 22. The Luxor is down 600 feet with a rotary and is having difficulty. The Midway Securities is 570 feet deep and Meyerstein and Wilcox are 230 feet, or have reached the first water sand, all on the same section.

Hale-McLeod well No. 4 on the south quarter of section 5, 32-23 is said to have come in as a gusher at a depth of 2050 feet. This well is close to the "Old" St. Lawrence, among the first of all the famous Midway gushers, and close also to wells of the Midway-Premier and the Midway Five Oil Companies.

The Western Minerals is getting oil in sections 22 and 25, 11-23, separated a distance of about 2½ miles, the oil being of a green color and between 20 and 21 gravity, Beaume. Both wells were obtained at a depth of about 1200 feet and are considered to have proved up considerable territory, making lands between Old Sunset and San Emidio appear oil bearing.

The well of the Essex Oil Company, located on section 6, 11-23, is down very close to the deep sands. The Pioneer Midway, who recently got such a huge gusher on section 30, on which is located the May's well, are installing a new boiler plant just west of the latter.

Work has been resumed at the Yellowstone lease of the Canadian Sunset, section 6, 11-23, mud having arrived from San Francisco Bay for the rotary, thus obviating further delay.

Well No. 1 of the Mammoth Oil Company, section 31, 31-23, which is located in the gusher region, is now about 1,700 feet down and is being watched with interest for gusher developments.

It is reported that the Hart Oil Company will sink four wells on section 13, in the Elk Hills country, in the immediate future.

The Santa Fe "2-6" gusher, one of the very first to gush in this region, is being cleaned out after a continuously uninterrupted flow since December 23 last.

Wells Nos. 1 and 2, of the United Oil Company are still keeping up their big flow.

The Eagle Creek's well No. 3 has been successfully brought in at a depth of 1552 feet, on section 31, 22-23, close to the Santa Fe "2-6" gusher and when it started its flow, that of the Santa Fe ceased. This well, No. 3, is now good for about 2,000 barrels per day. Well No. 2 of the Eagle Creek is still doing about 550 barrels per day. No. 4 has been spudded in.

The Yancey well, out on the flat, section 32, 29-22 has passed through 30 feet of oil sand which was encountered at 1,628 feet. As this is a deep territory the well will be continued for a number of hundreds of feet in all probability, before it is finished up to the satisfaction of those concerned.

RECENT INCORPORATIONS.

Ventura High Grade Oil Company, San Francisco. Capital, $500,000. L. T. Bennet, A. L. Lathrop and A. M. De Vall, incorporators.

Traffic Oil Company. Capital stock, $25,000. Directors, E. King, E. M. McFadden, O. C. Heck, J. H. Raney, L. H. Austin, J. Robertson, E. W. King, H. E. Hake, J. A. Kihele.

Silver Falls Oil Company, Los Angeles. Capital, $500,000. Directors, M. Bradfield, W. H. Cline, A. E. Hull, all of Los Angeles.

Santa Rosa Oil & Development Company, San Francisco; Capital, $250,000. Directors, R. G. Hudson, J. G. Walker, J. G. Weir, M. Brown and G. Weaver, all of San Francisco and vicinity.

Petroleum North Midway Company, San Francisco. Capital, $1,000,000. I. Sutcliffe, D. Stoney, A. Wilhoit, W. S. Hanford and W. D. O'Brien, all of San Francisco and vicinity, incorporators.

Midway Six Oil Company. Capital, $75,000. Directors and officers: W. C. Elderton, president; A. R. Rowley, vice-president; Warren Gillelen, treasurer; W. W. Pedder, secretary; H. D. Vandervere, assistant secretary; W. L. Meyers and George V. Kirkwood complete directorate.

Midway Royal Oil Company. E. H. Warner, L. S. Bowen, R. F. Haish, W. T. Collins and W. A. Brown.

Midway Petroleum Company. Capital stock, $600,000. T. J. Magner, G. W. Adams, J. N. Sewall, incorporators.

Midway Hospital Assn. Capital stock, $20,000. G. Malloy, C. S. Hutchinson, J. A. McNaughton, H. E. King, B. A. Owen, incorporators.

Midway Giant, San Francisco. Capital, $1,000,000. B. Davidson, B. M. Vigoureux, of San Francisco and Orde Smith of Oakland, directors.

Midlands Oilfields Company, Wilmington, Delaware. Capital, $1,000,000. E. B. Davis, W. J. Maloney, W. N. Akers of Wilmington, directors.

Merchants-Producers' Oil Company. Capital, $300,000. G. M. Harker, W. C. Prather, W. P. Cooper, F. W. Beau-de-Zart and Samuel Busch, directors.

Midget Oil Company, San Francisco. Capital, $25,000. J. D. Spreckles, Jr., W. H. Hannam and Ira S. Lillick, all of San Francisco, directors.

Maricopa Producers' Oil Company, San Francisco. Capital, $500,000. A. Byrne, J. Burns and F. Vaughn (all of San Francisco), directors.

Lakeside Oil Company, San Francisco. Capital, $500,000. A. P. Kratz, W. F. Hubbard, A. Saunders, W. L. McCormick (all of San Francisco and W. R. Grogan of Alameda).

July Oil Company, San Francisco. Thos. Wilkes, M. W. Terwilliger, E. K. Blair, all of San Francisco; Herman Layer of Berkeley and H. S. Kergan of Oakland, incorporators.

A. W. C. Oil Company. Capital stock, $200,000. A. W. Clark, G. R. Brown, F. M. Townsend, E. A. Weaver, W. A. Westerfelt, incorporators.

Berlin Oil Company, Fresno. Capital, $75,000. W. L. Whepley, P. R. Paolini, G. Schwinn, L. J. Miller, all of Fresno and D. B. Shafer of Denair, incorporators.

Buena Midway Oil Company. Capital stock, $500,000. A. W. Foster, Bessie Jones, W. B. Beasley, all of Bakersfield; M. Gregory and F. S. Stoddard of Los Angeles, incorporators.

Coalinga Midland Oil Company, Coalinga. Capital, $600,000. B. W. Bilby, H. Weinstock, L. Pasch, H. R. Crozier, W. J. Kilby, incorporators.

Coalinga Six Oil Company, Fresno county, Cal. Capital, $75,000. Warren Gillelan, W. L. Meyers, G. V. Kirkwood, W. C. Elderton, W. W. Pedder and H. W. Vandervere, all of Los Angeles, and A. R. Rowley, of Santa Rosa, incorporators.

Coalinga Eight Oil Company, Bakersfield. Capital, $600,000. J. M. Keith of San Francisco, W. L. Boggs, L. V. Olcese, F. E. Mannel, and B. A. Hayden of Bakersfield, incorporators.

Ida May Oil Company. Capital stock, $600,000. A. Hartzell, I. M. Hartzell, Los Angeles; G. F. L. Kipp, D. H. McClellan of Bakersfield and J. M. Flannery of San Francisco, directors.

Hygravity Oil Company, Fillmore. Capital, $3,000,000. H. C. Millsap, F. C. Paulin, C. R. Sparks, R. W. Kemp, E. C. Preis, all of Los Angeles, incorporators.

Fresno Oil Development Company, Fresno. Capital, $75,000. Subscribed, $60,000. Corporate indebtedness limited to $25,000. Directors: K. Emerzian, W. Kahriman, G. M. Boles, D. Bidegary, M. H. Alchian.

East Coalinga, Ltd., Fresno. Capital, $1,000,000. J. E. Mitchell, W. L. Chappell, L. F. Griffer, O. T. McCoon, and G. Schwimm, all of Fresno, directors.

Combination Midway Oil Company. Capital, $1,500,000. W. W. Wickersham, F. L. Lower and M. S. Robertson, incorporators.

California Carbon Oil Company. Capital stock, $1,000,000. E. K. Alpaugh, I. F. Peck and W. S. Stutsman, incorporators.

California-Arizona Pipe Line Company, Los Angeles. Capital, $25,000,000. The incorporators are E. L. Doheney, Norman Bridge W. L. Stewart, J. S. Torrance, L. W. Andrews, C. A. Canfield, T. A. O'Donnell, J. M. Danziger, C. W. Wellborn, of Los Angeles; S. W. Morshead of San Francisco and L. P. St. Clair of Bakersfield. See special notice in April and May numbers for information on this company.

Canadian-Pacific Oil Company, British Columbia. Capital stock, $3,000,000. H. E. Springer, Frank Tuhten, Geo. Lindsay and F. B. Springer of Vancouver; John N. Redmond, Collingwood, B. C., incorporators.

Corrigan Oil Company. Capital stock, $250,000. John Corrigan, Cleveland, J. M. Sands, J. L. Scott and R. E. Small, Los Angeles; E. C. Killemeyer of Taft, directors.

August Oil Company. Capital, $1,000,000. G. H. Monroe, A. B. Long, C. A. Telfer, J. Q. Anderson, and F. A. Homan, directors.

Barnodon Oil Company. Capital stock, $1,000,000. A. L. Weil, Vergil Shaw, J. A. Ferguson, H. S. Scott, W. J. Dinsmore, H. Kaaelbaum and L. L. Breslauer, incorporators.

Bakersfield Exploitation Company. T. H. Teal, S. W. Gundaker, W. B. Beaziley, incorporators. Capital stock, $25,000.

Coalinga Central Oil Company, Bakersfield. Capital, $600,000. J. F. Lucey, Los Angeles; E. S. St. Clair, Coalinga; F. C. St. Clair, R. C. White, R. McDonald, all of Bakersfield, incorporators.

Coalinga-Kettleman Oil Company, San Francisco. J. D. Spreckles, J. Barneson, W. H. Talbot, San Francisco; J. O. Hickman of Hanford and H. H. Welch of Fresno, incorporators. Capital, $200,000.

Casmalia Petroleum Company, San Jose. Capital, $300,000. R. F. Robertson, Los Gatos; T. E. Grimes and A. C. Eaton of San Jose, directors.

Canadian-California Oil Company, San Francisco. Capital stock, $100,000. Incorporators: C. A. Garland, H. H. Blood and G. T. O'Flanagan, all of San Francisco.

California Paving Company. Capital stock, $25,000. Incorporators: L. C. and C. Scherer, and Alfred Cooper.

California Oil Investment Company, San Francisco. Capital, $25,000. W. A. Greer, F. G. Stamm and L. T. Kibler, all of San Francisco, directors.

D. G. W. Oil Company. Capital stock, $24,000. J. B. Bulliner, J. F. Crease, S. F. Dixon, F. H. Williams and D. Ash, incorporators.

Esperanza Land & Oil Company, San Francisco and Flandren, So. Dak. Capital, $1,000,000. W. A. Krause, C. Mayer and R. H. Barth, incorporators.

Fried Lake View Oil Company. Capital, $1,000,000. Incorporators, Julius Fried, J. M. Dunn, P. Barrett, M. Haviland and F. E. Worthington, of Los Angeles.

Humauma Oil Company, San Francisco. Capital, $1,000,000. Directors: G. M. Phillipowski, Oakland; M. G. Jeffress, Leo Mund, W. H. Stevens and Leon and Morris, San Francisco.

United States Oil Fields Development Company. Capital stock, $1,000,000. T. H. Burnam, E. Manuim, H. L. Boyer, H. E. Harper and A. D. Offley, incorporators.

San Benito Crude Oil Company, San Francisco. Capital, $140,000. J. L. Stewart, Oakland; W. Schmidt, San Francisco; E. Curtis, G. T. Killam and Paul Rink, of Alameda, all directors.

South Midway Oil Company, Los Angeles. Capital, $1,000,000. Directors: Julius Fried, A. E. Hodgkinson, W. W. Worthington, F. E. Dunlap, all of Los Angeles; L. Butman, of Whittier.

Patton-Longley Midway Oil Company. Capital, $1,000,000. Officers and directors: P. R. Longley, president; J. M. Clute, vice-president; M. B. Patton, secretary and treasurer. Completing the directorate, are; J. M. McLeod and M. J. Fitzgerald.

National Petroleum Company, San Francisco. Capital, $1,000,000. Incorporators: J. R. and E. W. Aitkin, L. M. Ginsburg, L. M. Verso, J. Addicks, G. L. Baum, J. C. Stewart, all of San Francisco.

Midway View Oil Company. Capital stock, $1,000,000. Incorporators: R. N. Bulla, Lee C. Gates, N. W. Thompson, Thos. Hughes and Dr. J. T. Stewart.

Midway Provident Oil Company, Los Angeles. Capital, $1,000,000. E. W. R. Lawrence, E. F. Smith, F. B. Woodruff, A. W. Allen, F. W. Courtney, all of Los Angeles, directors.

Midway Pacific Oil Company. Capital, $2,000,000. Directors: Theodore Martin, L. F. Scott, D. W. Carlton, F. J. Hickey, J. L. Boyle.

Midway Hills Oil Company, Los Angeles. Capital, $600,000. Directors: C. F. Jones, Hollywood; W. S. Morse, J. H. Browne, G. O. Newman and F. M. Dorsey of Los Angeles.

Midway Divide Oil Company, Los Angeles. Capital, $1,000,000. Incorporators: G. D. Roberts, Coalinga; F. M. Benedict, F. J. J. Sloat, C. J. Heyler, of Los Angeles; O. W. Roberts of San Simon, Ariz.

Miners' Oil Company. Capital stock, $1,000,000. Subscribed, $5. Incorporators: H. W. Higley, A. Hart, M. Mattern, H. M. Jack and L. R. Powers.

Morgan Oil Company, Hanford. Capital, $1,000,000. Directors: J. Weisbaum, San Francisco; C. F. Fleming, S. Rehoefer, A. W. Reynolds and H. C. Kimball, all of Hanford.

Mexican Associated Oil Company, Phoenix, A. T. and Los Angeles. Capital, $1,500,000. Incorporators: W. W. Triggs, R. Paul and Chas. L. Wilde, all of Los Angeles.

Kern Midway Oil Company. Capital stock, $1,000,000. Incorporators: W. H. Cooley and F. N. Schofield of Bakersfield; C. H. Benedick of Maricopa and G. P. Lothain and E. H. Mitchell, of Taft.

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Patent Law
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MONTHLY STATEMENT OF DIVIDENDS PAID BY ACTIVE LISTED OIL COMPANIES TO MAY 30, 1910.

Company	Date Paid	Amount per share	Amount of Dividend	Total Paid to date
Alma	Apr. 15, '10	.03	11,400	$ 171,000
Amalgamated	May 1, '10	1.00	50,000	1,500,000
American Pet.	May 5, '10	1.00	126,735	1,310,165.50
Apollo	Mar. 20, '05	.01	2,000	4,000
Associated	Mar. 1, '07	1.50	446,055	1,548,368.55
Bay City	Feb. 10, '10	.20	20,000	90,000
Brookshire	Jan. 1, '10	.01	5,000	442,500
Caribou	May 15, '10	.25	20,175.75	740,883.24
Chicago Crude	Mar. 25, '07	½c	5,000	15,000
Claremont	May 28, '10	.02	10,000	345,000
Coalinga Pac	Dec. 23, '09	.10	6,500	107,250
Columbia	May 25, '10	½&½	9,992.62	294,782.11
Del Rey	May 15, '09	½c	3,927.50	11,782.50
Empire	May 31, '10	.....	.....	2,000
Esperanza	Dec. 27, '09	.02	3,200	49,450
Euclid	May 1, '10	.01	3,500	131,000
Four	Feb. 25, '10	.01	3,000	213,000
Globe	Apr. 1, '10	.01	6,000	87,000
Hanford	Jan. 30, '06	2.00	4,000	80,000
Home	May 20, '10	.02	2,000	478,000
Homestake	Feb. 10, '10	.10	1,000	77,250
Illinois Crude	May 1, '10	.01	2,000	92,000
Imperial	May 19, '10	5.00	500,000	2,500,000
Junction	June 1, '09	.01	2,500	20,000
Kern Oil	Nov. 19, '09	.22	22,000	42,000
Kern River	May 1, '10	.10	2,000	104,000
Linda Vista	May 9, '10	.01	3,838.50	76,770
Lucile	Dec. 20, '09	.10	2,670.44	42,727.04
Mascot	May 20, '10	.01	5,000	20,000
Mexican Pet.	May 1, '10	.01 1-3	85,616.70	3,648,576.94
Mecca	July 15, '09	.03	12,675	71,825
Monte Cristo	May 26, '10	.10	50,000	490,000
Nevada Co.	Oct. 13, '08	.04	10,000	40,000
Palmer	May 20, '10	.01	18,020.05	286,401
Paraffine	May 15, '10	.01	3,000	21,000
Peerless	Sept. 20, '09	.06	6,000	801,000
Piedmont	May 9, '10	.01	3,890	26,877.30
Pinal	May 31, '10	.10	14,992	917,085.50
Pittsburg	Nov. 11, '07	.24½	58,800	124,800
Premier	May 20, '10	.01	10,000	20,000
Producers	May 1, '10	1.00	10,000	80,000
Record	May 1, '10	.07½	7,500	70,000
Reed Crude	Dec. 28, '09	.12	12,000	1,124,000
Rice Ranch	May 10, '10	.01	3,000	105,000
Royalty	May 18, '10	.01½	300	16,066.66 2-3
S. F. & McK.	May 1, '10	.30	15,000	370,000
Sauer Dough	May 21, '10	.02½	4,987.50	527,278.50
Section 25	May 28, '10	.25	10,000	30,000
Sesnon	May 4, '10	.08	8,000	118,000
Silver T O Co.	Feb. 25, '10	.10	7,500	30,000
Sovereign	Apr. 15, '10	.01	5,000	95,000
Sterling	Mar. 15, '10	.12½	31,250	778,250
Superior	Feb. 12, '10	.01	5,000	57,500
S. W. & B.	Sept. 10, '09	.01	3,770	41,470
Thirty-Three	Apr. 6, '10	.20	20,000	690,000
Traders	May 15, '10	1.00	15,000	209,146.50
Union	May 20, '10	.50	124,813	6,617,881.15
United Pet.	May 20, '10	.50	40,375.50	2,259,710.92
Wabash	May 16, '10	.01	3,000	126,000
West Coast pfd.	Mar. 21, '10	2.00	20,816	83,264
Western Union	Dec. 15, '07	2.00	20,000	484,951
West Shore	Dec. 21, '08	.05	5,000	235,000

Total dividends paid to date **$29,958,276.80 2-3**

Total dividends paid to date $31,284,903.42 2-3

May, 1910 ..... 1,326,626.62

LOS ANGELES QUOTATIONS.

Company.	Bid.	Asked.
Amalgamated Oil	58.00	.....
American Crude Oil Co.	.....	80
American Pet. Co. (pfd.)	.....	96.00
American Pet. Co. (com.)	.....	71.00
Associated Oil	49.75	49.87½
California Midway Oil Co.	57⅜	58
Central	2.10	2.55
Cleveland Oil Co.	35½	36½
Euclid Oil Co.	55	75
Fullerton Oil	3.10	.....
Globe	.....	18
Jade Oil Co.	35	36
Mexican Petroleum	1.00	1.15
Mexican Pet. Ltd. (Com.)	.....	27.00
New Pennsyl. Pet. Co.	1.11	1.17½
Olinda Land Co. (Oil)	55	61
Palmer Oil Co.	1.40	.....
Perseus Oil Co.	.....	35
Pinal Oil Co.	.....	13.00
Piru Oil & L. Co.	18	.....
Rice Ranch Oil Co.	.....	1.05
Section Six Oil Co.	.....	50
Trader's Oil Co.	.....	125.00
Union	108.00	108.25
Union Provident Co.	106.00	107.00
United Petroleum	.....	110.00
West Coast Oil Com.	9.00	.....
Western Union	.....	100.00
Oleum Development Co.	09	09¼
NON-PRODUCERS.		
Coalinga Crude Oil Co.	.....	31
McKittrick Oper. Oil Co.	06½	19
Oleum Development Co.	08½	08½
Provident Midway Oil Co.	05	.....

LATEST QUOTATIONS ON THE CALIFORNIA STOCK AND OIL EXCHANGE.

Company.	Bid.	Asked.
Alma	1.00	1.50
Amy	.....	1.35
Apollo	10	14
Associated Oil Stock	48.75	48.87½
Associated Bonds 5s	.....	98.50
Blue Moon	32	.....
Brookshire	1.75	.....
California Oil & Gas	.....	1.20
Caribou	.....	17.75
Chicago Crude	12	.....
Claremont	1.80	1.85
Coalinga Central	.....	53
Del Rey	18	.....
De Luxe	2.10	2.30
Enos	.....	1.57½
Illinois Crude	50	55
Imperial	.....	30.00
Mascot	2.20	.....
McKittrick	23	.....
Monte Cristo	3.30	3.40
Nevada County	25	35
New Penn. Petroleum	1.12½	1.15
Paraffine	1.00	1.40
Palmer	1.32½	1.37½
Pinal	10.00	10.12½
Premier	1.15	1.20
Republic	50	.....
S. F. & McKittrick	.....	28.00
Sauer Dough	.....	1.95
Section 25	26.00	.....
Sesnon	8.00	.....
Silver Tip	.....	2.77½
S. W. & B.	50	.....
Wabash	.....	1.55
W. K. Oil Co.	.....	4.00

RECENT PATENTS.

Joint for well tools, etc., C. M. Heeter, Butler, Pa., 959,341.

Well tube holder, L. L. Preston, Dripping Springs, Tex., 957,091.

Mechanism for elevating liquids, M. J. Christensen, Chicago, Ill., 957,656.

Well mechanism, M. E. Layne, Houston, Tex., 957,974.

Combination casing wrench, W. L. Dunn, Gaviota, Cal., 958, 698.

Process for the treatment of oils, J. H. Parker, Los Angeles, Cal., 958,820.

Pump for wells, J. F. Durham, McKittrick, Cal., 958,862.

Double-acting deep-well pump, J. G. Dorward, San Francisco, Cal., 959,321.

Gas controlling device, W. C. Simmons, Gassaway, W. Va., 959,397.

Roller drills (2), H. R. Hughes, Houston, Tex., 959,539 and 959,540.

Big Panoche Oil Stock now selling at 15c per share. Now is the time to buy before the next raise. Big Panoche Oil Company, 410 Mills Bldg., San Francisco. Phone Kearny 4585 Home C 1695

California Oil Views

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Partial List of Latest Oilfield Views: Title and Description.

No.		Size	Price
550	Salt Lake Oil Field, Los Angeles Co.	10x63	$2.50
551	Beverly Oil Field, Los Angeles Co.	10x59	2.35
552	Fullerton Oil Field (Brea Canyon)	10x61	2.45
553	Fullerton Oil Field	10x64	2.50
554	Kern River Oil Field (from China Grade)	10x55	2.15
555	Petroleum Development Co. (Kern River	10x36	1.45
556	Central Point, looking northwest (Kern River)	10x32	1.00
557	Central Point, looking northeast (Kern River)	8x35	1.00
558	Kern River Field, looking north from Jap Hill; showing Reed Canfield, Sterling Oil Co., Linda-Vista and Piedmont leases	10x42	1.70
559	Oil Center, looking east, south and west from the Postoffice	10x41	1.65
560	Oil Tanks and Reservoir, Kern River Field	8x35	1.00
561	McKittrick Oil Fields, McKittrick in distance	10x47	1.90
562	Standard Oil Co.'s Plant, showing tanks etc.	10x40	2.00
563	Taft, great oil shipping center	10x50	2.00
564	Fullerton Field, east from Union Hill	10x68	2.50
587	Lakeview property and "25" Hill	12x27	1.50
590	FAMOUS LAKEVIEW GUSHER, showing wonderful reflection	12x26	1.50
591	LAKEVIEW GUSHER—The Gusher is more prominently displayed in this view	12x32	1.50
593	Maricopa Oil Field, showing great Lakeview Gusher, Taft, Moron, the lake of oil and Maricopa	10x71	$2.50
595	Town of Maricopa. Derricks in distance	10x51	2.50
596	McKittrick Oil Field, close-in view, derricks advantageously shown	10x48	1.90
600	Extreme end of North Midway	10x34	1.70
601	North Midway, showing Santa Fe and McLeeds properties	10x58	2.50
602	Birdseye view of Taft and Moran	10x43	1.25
653	Famous Lakeview Gusher after 75 days continuous eruption	10x30	1.50
1001	Santa Maria Oil Field, Bell lease	10x56	2.25
1002	Santa Maria Oil Field, Fox lease	10x62	2.50
1012	San Francisco-McKittrick Oil Field	10x47	1.90
1013	McKittrick Oil Field	10x45	1.80
1014	Maricopa Oil Field	10x69	2.50
1015	Midway Oil Field, looking southeast from Section 25	10x42	1.70
1016	Midway Oil Field, looking west from Section 25	10x49	2.00
1018	Coalinga Oil Field	10x69	2.50
1019	"California Limited" Oil Field	10x49	2.00
1020	Town of Coalinga	10x68	2.50

More Views are being added daily. If you are interested in any particular field, write us.

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1000	shares Alisal Oil Co.	$ .09
2000	shares Alaska Petroleum & Coal Co.	.18
100	shares Jewel Oil Co.	Bargain
1000	shares Templor Ranch Oil Co.	.19
1000	shares La Blanc Oil Co.	.27
1000	shares Mammoth Channel Gold Min. Co.	.10
100	shares Coalinga Peerless Oil Co.	Cheap
1000	shares United Oil Co.	Bid
1500	shares Lady Washington Oil Co.	.13½
1000	shares Yellowstone Oil Co.	.40
1000	shares Ventura Oil Dev. Co.	Bid
2000	shares Liberty Oil Co.	Wanted
2000	shares Big Panoche Oil Co.	Bargain
25	shares Rio Michol Rubber Plan. Co.	Wanted

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E. F. Wayland & Co., Brokers

476 Monadnock Bldg., San Francisco, Cal.

Stocks Offered for Quick Sale

5,000	shares Monterey Coal Co.	@	$0.02
5,000	Ypba Cons. Gold Mining Co.	@	.05
3,000	Alaska Petroleum & Coal Co.	@	.18
2,000	shares Four Metals (San Jose)	@	.06
1,000	Ventura Oil Development Co.	@	.10
1,000	shares La Blanc Oil Co.	@	.28
1,000	Lady Washington Oil Co.	@	.14
1,000	shares Coalinga Crude Oil Co.	@	.18
1,000	shares Templor Ranch Oil Co.	@	.20
1,000	shares Four Oil Co.	@	.15
500	shares Jewel Oil Co.	@	.25
200	California Pressed Brick Co.	@	.20
200	shares Mascot Copper Co.	@	4.90
200	Int. Endless Chain Saw Co.	@	.20
100	Burlingame Tel. Typewriter	@	.45

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Price of Oil Must Advance

(By the Editor of the California Derrick.)

In almost direct ratio to the production of oil is the price obtained for it by its producers. This, at any rate, has been California's experience. When this State was a small producer oil men received a low figure for their oil. When the production soared, prices rose.

To the uniniated in California's oil history, the statement will seem to oppose the laws of Supply and Demand. But it is susceptible of explanation that conforms to economical laws: With increasing production oil prices have risen in California because of many reasons, among which two stand out pre-eminently:

I.

Increased production has been followed by an increase in oil transportation and storage facilities (and vice versa) and by a consequent increase in the consumption of oil and a widening of its uses. Large consumers have been assured of a constant supply, and as oil is the cheapest and most conveniently handled fuel known, its price is bound to rise to that of its nearest fuel competitor, coal.

II.

Increased production has been accompanied by the increased strength of the individual producers. California oil of less gravity than that of Oklahoma brings higher prices because California producers are standing together and marketing their own oil.

To these two propositions may be added a third and that is: As production increases the average price of oil will continue to advance as rapidly as transportation and storage facilities provide new markets. Although the price of oil may fluctuate temporarily, it is bound to advance and the producer not selling his product to a middleman, will receive at the wells the advantage of the increase caused by the increased demand.

* * *

Impossible as it may seem, the facts of the case are that when there was but a tithe of the present production, there was likewise but a small proportion of the present price granted to the producer. When oil had reached the bottom—the falling out mark on the market, but four or five years ago; when production was being curtailed; when a calamity howl was being raised with utmost strenuosity; then the producer, suddenly coming to his senses, came into his own by forcing a raise, by obtaining a market and consequently a higher price for his product. That bug-bearish cry, now being raised by certain interests that pray for a reduction and are working for it, because they see that within a short time there will not be enough oil to support the sudden enormous widening of the market; that "over-production" cry was raised before, and it scared all producers into foolishly surrendering for a time; into giving their oil away; when, suddenly, realizing that if they stood together they could beat their opponents, as one man they demanded a higher price, they produced more oil; and they got what they demanded.

The same situation faces the producer to-day: Certain great interests are doing all in their power to keep the price at its present level; they see that with the widening market an advance is inevitable. They see that their huge profits as middlemen are therefore in danger of suffering a curtailment; and they are working actively but quietly to prevent the producers from realizing their own immense power.

The California Derrick calls the attention of producers to their opportunity. This is the time, NOW, not to make long term contracts at a little reduced price "for the time," but to make short term contracts, and make them at an advance. Recently the American Petroleum Company and the American Oilfields joined the Independent Producers' Agency. They made a special contract by which they were guaranteed fifty cents per barrel for their oil; and immediately after, says the Bakersfield Oil Journal, they offered the officers of the Agency Fifty Thousand Dollars to be released from their contract. Why? Perhaps they saw their strategic position. They are large producers; but they are in this matter not one whit different from every other producer. The producer has the upper hand, and seems to have come into his own. But it is the opinion of the writer, that if the producer only demands a higher price, he could receive, and in some cases he will shortly be receiving as high as $1.00 per barrel for the poorest kind of fuel oil on the market and in proportion for better grades. The reasons for this are irrefutable. I will give them in the order of their importance.

NEW MARKETS AND EVIDENCES OF SAME.

An era of pipe line building has just been commenced. The greatest project, as all oil men know, is the California-Arizona Pipe Line Company's line which will extend even into old Mexico—that has hitherto lacked cheap fuel—spanning an empire in extent and widening the market some four millions of barrels, annually. The line is to be completed, it is said, within the year, although it seems hardly possible at the present time that it can be completed within two years, when it is considered that the work of construction has not yet been begun. In case the line is finished within two years we have a sure market for at least 4,000,000 barrels of fuel oil and a probable market for about double that amount as soon as the industrial and manufacturing concerns in the various territories passed through become acquainted with the great saving that can be effected by installing oil-burning apparatus. The Associated Oil Company is about to build a line into Nevada. Plans are now under way; the line is to start from Tracy, Cal., and run for a

distance said to be in the neighborhood of two hundred miles, supplying all manufacturing, lighting, and municipal concerns with fuel as well as providing for a railroad. The Standard is at present engaged in doubling its line to the Midway district. The Producers are about to build another line to tidewater. Apparently there is an oil market to be reached out for, or all this building would not be contemplated, much less contracted for.

Recntly it was announced that northern roads would replace their coal-consuming locomotives with oil burners. A huge market is to be seen here, if the producer cares to open his eyes. Considering the fact that in the neighborhood of 60,000 barrels of oil per day are being consumed here in California by the various railroads, it looks as though the market were about to be doubled. Coal, at present prices, is an impossible fuel for the West; oil is the only working fuel upon which dividends can be paid. Either coal must come down just about one-half, to make oil stay at its present rate, or oil must go up to treble the price at present received before the big interests can hope for a reduction. Coal must be displaced as fuel by oil in the Northwest. It is an economic necessity. There is absolutely no comparison in the relative advantages to be derived from the use of coal and oil; the latter is so immeasureably superior in its every phase. Oil at double its present price is more economical than coal at one-half its present price; and its cleanliness, the many ways in which it saves labor, and its easy storage makes it generally more desirable.

Immense storage tanks are now being planned in order to get enough oil above ground to assure users and prospective users of a steady supply. It has been urged by some people that oil above the ground is much harder to dispose of at a good price than that which still lays hidden. The absurdity of this statement is apparent: to say that after a man has produced, with labor, a certain absolutely necessary commodity, and is keeping it ready for a good market, that he will sell what he has for less than if it were still to be obtained from the bowels of the earth, is ridiculous. It stands to reason that the man who has the commodity ON HAND, ready for immediate delivery, can make a better contract than if it were still to be produced. What reason is there for such an argument? The interests want the oil man's product for a low price and are therefore trying to manufacture "reasons" why he should surrender what he has for their benefit, by scaring him into believing that what he has, if it is available, is worthless. The carrying out of storage plans of the Independent Agencies will be a great benefit to the oil men who are affiliated with the agency; and indirectly to all producers of oil on this coast.

FOREIGN MARKET FOR CALIFORNIA OIL.

The consumption of oil from our fields is enormous. Everybody knows by this time that the market stretches from Nome on the north to Valparaiso on the south, and from Denver to the remote fastnesses of Siberia and Manchuria. This is old. But does the oil man realize that oil is limited in quantity, that Great Britain, in its eagerness for a product which we almost give away, is scouring all British possessions, and that with the utmost exploitation of one-fifth of the known world the British cannot by any conceivable means get enough oil in their great empire to begin to supply their market? Of the entire petroleum output of the world the United States produces sixty-four per cent and California produces far and away the greatest part of this output. In their eagerness to purchase oil-bearing lands the Englishmen have reached across an ocean and a continent to buy up every bit of producing California oil land that is for sale, and they are still seeking investments. It is said, and I have personally been informed by a well-known Englishman who is an authority on petroleum affairs in Great Britain and California, that the British Admiralty is planning to use a larger amount of California oil for the British navy, than is at present dreamed of. The British are going to lay up a huge supply against the time when oil is not given away, as it is at present. It is evident to the astute British mind that oil cannot long remain at its present comparatively low purchasing price. England has only about five per cent of the known petroleum deposits of the world, and has to rely on America for most of its oil.

There can never be an over-production of oil in this State. There has never in the whole history of the oil industry been a rosier outlook for the holder of oil-producing lands. Some of our contemporaries continue to raise their calamity howl about a near decline in prices at the well, but we will venture to assert right now that their talk on its face is nothing but pure hypocrisy, because no one will run down his own business unless he is an hypocrite. Until the last he will praise it up and try to get out with all flags flying. These papers which howl about reduction present the appearance of having an ax to grind with certain interests turning the grindstone.

The California Derrick asserts, as it has for several years past, that the future holds promise for better prices at the wells than have ever been received. Common sense will tell any and every oil man who is in the producing business that the whole matter of a good price for his product lies in his hands. If he chooses to command a good price he will get it, but in case he is of faint heart and not broadly intelligent enough to co-operate with his fellows he will be squeezed to the wall, and deservedly so.

We predict that inside of one year fuel oil will be bringing one dollar at the well, if the oil man "stands by." The Independents have proved what can be done; the price has been raised from eleven cents to sixty-five cents. Such being the case the oil man knows his strength at last. And the calamity cry is doomed beforehand to an utter and absolute failure of its purpose.

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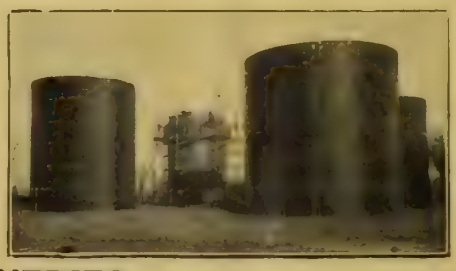

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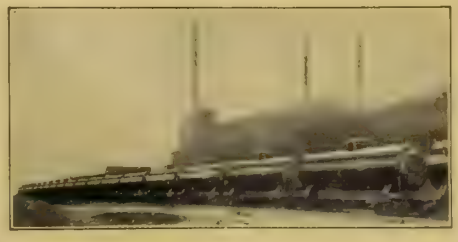

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THE OIL AUTHORITY OF THE PACIFIC COAST

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ORIGIN OF PETROLEUM—FOURTH PAPER

By PAUL W. PRUTZMAN, of the California State Mining Bureau.

Before discussing the possibility of petroleum formation from vegetable matter, it is necessary to outline as briefly as may be, the chemical nature and relationships of the coals. This may appear to be a digression, but it is not so, the coals and the tars produced from them being so closely related to the petroleums that it is quite impossible to intelligently discuss the one without some understanding of the other.

Constitution of Vegetable Matter.

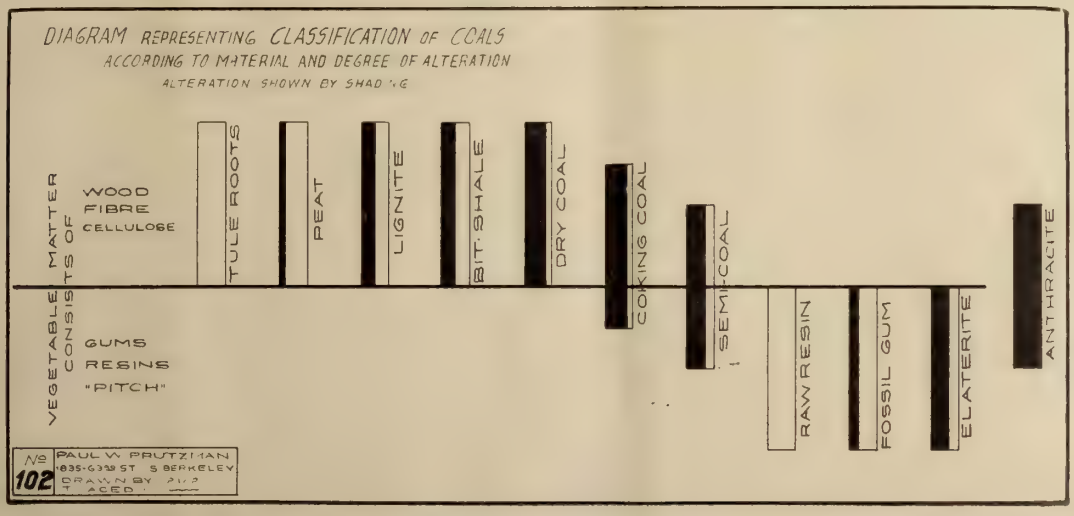
All vegetable growth consists mainly of the following elements, combined in various proportions:

Water, carrying in solution various salts and sugars, and known as sap.

Cellulose, a very complex hydrocarbon, closely related to starch, and with the sap making up the bulk of the woody or fibrous portions.

Resins or gums, of which common rosin is a type, generally semi-fluid, sticky substances, usually containing some turpentine, on the evaporation of which they become hard and brittle.

The soft and fleshy portions of vegetation consist mainly of sap and cellulose, the proportion of water being very large. As cellulose is subject to fermentation, the soft portions perish very rapidly on exposure to a minor degree of heat with a limited supply of air, while in the open air in a dry climate, they become dessicated and shrink to a small residue.



The hard and woody portions consist, in the soft, dry woods such as cedar, sugar-pine, poplar, etc., mainly of cellulose, while the pitchy woods, such as long leaf pine, and fir, contain much resin. The resins, of which there are a number of chemically distinct varieties, usually occur in the wood solution in more or less turpentine.

Formation of Coals.

Coal is the name applied to a large class of bodies occurring in nature, which are supposed to have originated in the adulteration of vegetable matter, and which range in properties all the way from peat to anthracite. These bodies are of the greatest interest to the student of petroleum, but while, because of their long continued use in the arts, we know a

great deal about their properties and their behavior under various circumstances, we know almost nothing as to their real chemical constitution. This is unfortunate, as they occur in nature in great quantity, and a knowledge of their chemistry would not only increase their usefulness but also throw much light on many questions relating to lubricating oils and the asphalts. About all we know of them is that they are complicated substances containing a very large percentage of carbon, with much less hydrogen, and small amounts of oxygen, nitrogen and sulphur. They are very unstable and break down under heat or in the presence of oxidizing agents. The true coals are insoluble in any known substance, and at high temperature are destroyed, giving off gases, hydrocarbon oils, pitch and ammonia, and leaving a residue of carbon (coke).

All coals appear to be formed from accumulations of vegetable matter by the action of pressure, water and a minor degree of heat, all acting through long periods of time. The differences we find between different coals are due to four causes, the class of vegetation from which the deposit was formed, the length of time during which the altering causes have acted, the degree of temperature to which the deposits have been subjected, and the amount and nature of the mineral constituents or ash.

Peat.

Where masses of rank vegetation die and are buried in marshy spots, to be repeatedly covered by new growth, PEAT is formed. This consists of the half decayed roots and stems of marsh grasses and reeds, contains a large percentage of ash (incombustible material, usually merely river mud), and a great deal of water. Where the ash content is not too high, and the water can be removed, it makes an excellent fuel, and many of the large deposits in various parts of Europe are now being worked. An attempt to utilize those found in the lower reaches of the Sacramento and San Joaquin Rivers, met with failure on account of the excess of mud. Probably commercial conditions were not very favorable, as part at least of the ash could have been removed by washing.

Peat is partly formed coal. The heat and pressure necessary to the formation of a true coal have been lacking, and the material instead of being hard and homogeneous, is soft, and shows considerable traces of the original vegetable structure. But the color has become nearly black, a large part of the hydrogen has disappeared, and the cellulose has evidently been largely converted into other substances, as caustic alkalis which convert cellulose to a pulp, are without action on peat.

Lignites

Have been altered further than peat, and much more resemble coal in appearance; in fact, the best grades of lignite can only be distinguished from coal by the difference in fracture. As a class, lignites are softer than true coals, are brown rather than black, and break in irregular shapes, often with a rounding or shell-like surface (conchoidal fracture) instead of along parallel planes. Lignites as a rule have a high percentage of ash, but this is incidental rather than characteristic.

The analysis of lignites does not distinguish them from true coals; for while the percentage of fixed carbon (coke) is, on the average, higher than the average for bituminous coals, yet in many cases both fixed carbon and ash are lower than in the case of coals which burn very much better. It is my opinion that the total failure of our local lignites as fuel is due less to an unsatisfactory composition than to lack of the properties of fusion and crepitation. Many of the true coals fuse and run in the fire, forming masses which must be broken by slicing, but which are continually offering fresh surface to the fire. The non-fusing coals all crepitate—that is, as they are heated by the fire, they continually flake off in small particles, with a crackling noise, and this continues until the lump is entirely consumed. Lignites, on the contrary, burn freely for a short time, until a skin of ash is formed. This skin does not remove itself, but covers the unburned coal and excludes the air, so that the fire can be maintained only by constant stirring.

Cannel

Is a very pure and soft coal, probably a lignite, but almost free from ash. It is classed with the non-coking coals.

Bituminous Shale

Is a very earthy coal, containing up to 85 per cent ash, and should not be confused with our own bituminous rock, which is merely an oil saturated sand. It is of a soft consistency, of a grayish black color, and does not fuse in the fire. This is a most interesting material, though found in commercial quantities only in Great Britain, and a description of the methods by which profitable quantities of petroleum products are produced from it will be given in a later chapter.

True Coals

Are divided into two great classes—the coking or fusible coals, and the non-coking or infusible. It will be understood, of course, that all coals give coke or free carbon as a final residue of destructive distillation, but the coke from infusible coal is in small lumps and of no commercial value.

The COKING COALS begin to melt and to decompose at about the same temperature, that is, samewhat below a red heat. In an open fire, fusion takes place in spots, the thick viscid material bubbling out in little craters, giving off gas and breaking down immediately to coke. The action suggests that the fusible portions lie in spots or streaks instead of being uniformly distributed throughout the material. Fusion in a closed retort has of course never been actually seen, but from the appearance of the coke after cooling, it would seem that the entire mass becomes pasty or semi-fluid before the coking process is completed.

The NON-COKING COALS, on the other hand do not melt on heating, but hold the shape of each lump until decomposition is finished and only coke remains. They commence to break down at the same temperature as the coking coals, and give the same products.

Anthracite

Is the final product of the coal forming process. It is almost pure carbon, gives neither gas nor tar on distillation, and if air is excluded can be heated to any temperature without change. It appears to be the residue from the slow distillation, under high pressure, of either coal, or coal-forming materials.

Coals are readily distinguished from asphalts by treatment with certain organic solvents, such as chloroform, carbon bisulphid, and benzol, which dissolve asphalt readily and completely, but have no effect on coal. Between coal and asphalt, however, lie a number of little known bodies, such as Elaterite and Grahamite, which have intermediate properties. Elaterite, for instance, is entirely insoluble in chloroform, though on continued boiling or soaking, it swells, like rubber soaked in gasoline. But not the slightest trace passes into solution, no matter how long boiling is continued.

On heating Elaterite in the open air, it softens, swells, and finally burns, much like a coking coal. But on heating in a closed retort, it slowly melts to a thin liquid (at about 500 degrees Fahr.), giving off some gas and a little thin oil. The residue from this fusion, from 80 per cent to 85 per cent of the original sample, is readily soluble in chloroform, in its own distillate, and even in petroleum, and melts at about 250 degrees Fahr. In other words, the properties of the fused material are completely distinct from those of the original.

These materials of which Elaterite is a type, are probably "fossilized" or altered resins. In tropical regions a number of species of tree yield gums, which, taken fresh from the

tree are soluble in turpentine, but are soft and have little durability. These same gums are also found buried in ancient forests, and when thus found, have a high melting point and are insoluble in turpentine, but become soluble after fusion, which, as in the case of Elaterite, involves some decomposition and greatly lowers the melting point. In this fossilized state they are much harder and more durable than the original gum, but are only slightly deeper in color. The behavior of Elaterite on fusion is so exactly that of the fossil gums that I am strongly inclined to believe that this material is a gum resin in which alteration by pressure and a mild heat has proceeded still further, increasing the percentage of carbon to the point where the original yellow color gives place to black, but not otherwise altering the general constitution of the gum.

In the neighborhood of Coos Bay, Oregon, certain coals are found which stand midway between real coal and the Elaterite class. These are insoluble in their original condition, but after fusion, become partly (usually about half) soluble. These may be classed as mixtures of altered gum resins and true coal or lignite.

In the attached sketch the horizontal line is the dividing line between the fibrous portions of vegetation and the gummy or resinous portions. Most forest growth contains considerable resin, some classes of tree, and some portions of the tree more than others. Marine vegetation on the other hand contains little or no resin. The fossilization of marine vegetation would therefore give us a dry or lignitic coal, while the alteration of forest growth would furnish a more or less "fat" or fusible coal, depending on the richness in resin of the particular trees flourishing there and also on the extent to which the fibrous portions had been destroyed by decay previous to alteration, the cellulose being more or less subject to decay, while the resins are extremely permanent.

The width of the black line at the left of each bar is suggestive of the degree of alteration which has taken place. Thus, the first bar, dry vegetable fibre, is completely unaltered, peat but slightly, lignite more, and dry coal almost completely. All these lie above the line as they contain little or no resinous elements. The coking coals lie partly below the line, as they contain a notable proportion of resin. Coos Bay Coal (a "semi-coal), lies across the line, while the gums and Elaterite lie entirely below the line, being apparently the same material in different stages of alteration. Anthracite is completely altered, and thus gives us indication of the class to which it originally belonged.

(To be continued.)

ADVANCE IN CONSUMPTION OF OIL.

Figures compiled by experts show that with the enormous increase in the production per day of oil in this state, there has been an even larger and more than proportionate increase in consumption during the last year, discounting the output of the Lakeview gusher. If it were not for this one well consumption would be a little in advance of present production. A year ago the daily consumption averaged about 142,000 barrels. Now the daily consumption reaches the stupendous total of 190,000 barrels, or an increase of 48,000 barrels of oil per day. It is authoritatively stated that but for the output of the Lakeview the country would actually be on the edge of a shortage all the time, in spite of the fact that the Maricopa flat has opened up as such a prolificly promising territory. However, drilling on the flat and in Cat Canyon seems to show that the production can be kept to its present size for a time at least, even if the Lakeview should cease to flood the Union with oil. Needless to say, this is the banner year in the history of the production of oil.

PLUTO.

The new oil town in the Devil's Den District is to be named Pluto.

EXPORTS FOR MAY, 1909-1910.

The following table exhibits the exports for May 1909 and 1910, in gallons:

Crude.	
May, 1909	11,775,150
May, 1910	11,397,476
Decrease	377,674
Napthas.	
May, 1909	4,148,198
May, 1910	9,548,981
Increase	5,409,783
Illuminating.	
May, 1909	75,422,351
May, 1910	85,494,447
Difference	10,072,096
Lubricating and Paraffine.	
May, 1909	9,813,176
May, 1910	14,567,167
Increase	4,753,991
Residuum.	
May, 1909	8,308,748
May, 1910	9,218,4[illegible]
Difference	909,660
Total Mineral Oil.	
May, 1909	109,467,623
May, 1910	130,226,479
Increase	20,758,856

The following table exhibits the exports for eleven months of the fiscal year of 1909 and 1910:

Crude.	
1909	110,281,366
1910	112,718,148
Difference	2,486,782
Napthas.	
1909	47,823,538
1910	56,232,779
Difference	8,409,241
Illuminating.	
1909	976,805,089
1910	913,480,403
Decrease	63,324,686
Lubricating and Paraffine.	
1909	129,678,691
1910	151,283,372
Increase	21,604,681
Residuum.	
1909	86,851,091
1910	106,420,[illegible]
Increase	19,569,346
Total Mineral Oil.	
1909	1,,351,389,775
1910	1,340,135,139
Decrease	11,254,636

PRODUCTION FOR MAY, 1910, IN DETAIL.

The following table shows the total number of wells producing in California with their production, by districts, for the month of May:

Kern River	1,476	1,311,765
McKittrick	160	456,750
Midway	185	851,755
Sunset	111	1,182,40-
Coalinga	667	1,669,283
Watsonville	4	1,480
Arroyo Grande	2	930
Lompoc	17	51,930
Santa Maria	131	541,460
Summerland	141	6,640
Santa Paula	252	42,680
Newhall	70	14,188
Salt Lake	238	281,45-
Los Angeles	418	39,639
Whittier-Coyote	139	115,443
Puente	54	3,800
Fullerton-Brae Canyon	228	423,193
Total	4,293	6,995,825

OPERATIONS.

The following table shows wells drilling and rigs and wells completed.

Kern River	57	46	46
McKittrick	65	28	7
Midway	161	76	23
Sunset	57	16	6
Coalinga	153	25	7
Watsonville	1	....	....
Arroyo Grande	5	1	.
Lompoc	11	1	.
Santa Maria	43	4	3
Summerland	2	....	....
Santa Paula	32	4	2
Newhall	8	1	.
Salt Lake	25		.
Los Angeles	....	....	....
Whittier-Coyote	15	1	1
Puente	3	....	....
Fullerton-Brae Canyon	45	5	4
Total	685	208	103

PETROLEUM SHIPMENTS.

Following are the shipments from California for the past month:

Union Oil Company from the port of San Luis Obispo, 340,000 barrels to domestic and foreign points; through the Customs House at San Francisco, to Honolulu, Panama and Chili, and from San Pedro they shipped 49,000 barrels.

The Producers Transportation Company shipped 240,000 barrels. This passes through the port at San Francisco for Panama, Chili and Guatemala.

OIL INDUSTRY'S SPECIAL EDITION.

The special edition of the Oil Industry, edited by the very well known oil authority, Mr. Allan G. Nichols, of Los Angeles, made its appearance about the 20th, ultimo, and was widely praised as an achievement of no small magnitude. The number was profusely illustrated and was filled with interesting accounts of various wells, with statistics of importance and with the reminiscences, stories and opinions of the majority of the leading oil editors of the country. The paper met with a most favorable reception everywhere.

VACUUM OIL CO.

The Austrian Ministers of Finance, Commerce and Railways have decided to fight the Vacuum Oil Company, the Austrian branch of the Standard Oil Company. So great are the resources of the Standard and so excellent is the product which their American machines and laborers turn out, that it is difficult for the products of any nation on the face of the earth to enter into successful competition with their products. Canadian and British capital is taking a very strong foothold in California, especially in the Valley fields, where some $15,000,000.00 is said to be invested. Certainly the British here have excellent properties, no matter at what prices they are held.

STANDARD OIL COMPANY PAYS DAMAGES.

The Supreme Court of Iowa recently handed down a decree compelling the Standard Oil Company of Indiana to pay $6,120 with ten year's interest at 6 per cent as penalty for putting the Crystal Oil Co, of Des Moines, Ia., out of business. The case was appealed from a district to the Supreme Court of Ia. The Petroleum Gazette says, in regard to the process of separating the Crystal from its business: "In taking this Company's business away to such an extent that it was soon forced to sell out at a sacrifice, the usual small and dirty tactics were employ- at a sacrifice, the usual small and dirty tactics were employed."

STANDARD—MINNESOTA CASE.

In the case of the State of Minnesota vs. the Standard Oil Company, the Supreme Court of that State has rendered a decision upholding the constitutionality of the State's antidiscrimination law, under which it was sought to oust the Standard from the State. The case started in the District Court of Ramsey County, where Judge Bunn held that the law was class legislation and therefore unconstitutional. This decision has been reversed by the Supreme Court and the case goes back to Ramsey County for trial on its merits.

STANDARD HEADQUARTERS MOVED.

The Standard Oil Company has decided to move its headquarters from Twenty-Four Hill, near Taft, including their commissary department, to Section 14, near the pumping station about a mile North and West of Taft, where they will erect a number of new buildings, among which will be a machine shop necessitated by the company's growing needs in Midway.

PIPE LINES COMPLETED.

The Standard has completed its pipe line from Bakersfield to the Midway region, and it is running oil. They are contemplating another line which will run out to Section 30, where the big wells are located. The new line from Bakersfield exactly doubles the Standard's capacity to handle Sunset, Maricopa and Midway Oil. In addition to these new lines the Standard is said to be laying a new six-inch line from the big wells in Buena Vista hills to Point Richmond, which will supply the pumping stations along the route with gas from their big gas well, the old 4-inch gas pipe being converted into a water supply pipe. The Associated Pipe Lines Co. is doing rapid work on its new pipe line from Coalinga to Maricopa, which has already been laid about thirty-five miles south of Coalinga. This line will pass through the Devil's Den Country, Templor, McKittrick, Midway and end in Maricopa. It will afford still another outlet for a large supply of oil from this at present congested district.

UNION IN EXCELLENT CONDITION.

The Union Oil Company has completed the building of a reservoir with a capacity of 2,500,000 barrels, and has begun the construction of an earthern reservoir with a capacity of 6,000,000 barrels, six miles from the Lakeview gusher. This reservoir is to be built in a canyon and will be fortified against the inflow of the winter rains and excessive evaporation. The Union is storing the entire output of the Lakeview.

Circulars areout stating that the treasury stock of the Union Oil Company will be offered to stockholders of that company and of the United Petroleum and of the Union Provident companies at $100 per share. The stock is to be sold to meet the demands of increasing business, such as extra tankage, new pipe line facilities and others things. Certain inducements are offered to the present stockholders.

Accompanying the circular which was sent to all the stockholders, President Lyman Stewart addressed a personal letter, which is as follows:

The Union Oil Company of California obtained a controlling interest in the Lakeview Oil Company, which owns the greatest known oil well in the world. It commenced flowing on the 14th day of March, 1910, at a rate of approximately 1,000,000 barrels of oil per month, and still maintains that volume. To store this oil, with a view to limiting losses from absorption and evaporation, it has been necessary to build an unusual number of large capacity steel tanks, and pending their erection, to make a number of earthern reservoirs for its temporary retention. The building of these tanks will not only prevent losses as above indicated, but will remove the necessity for insuring the oil while exposed to the unusual risks incident to natural earthen storage.

In the annual report for 1909, I had occasion to invite your attention to the purchase of the S. S. Pectan, the purchase of a site for terminal facilities at Seattle, and the construction work of the Outer Harbor Dock & Wharf Company at San Pedro, since which time it has become necessary to purchase additional means of transportation and to materially augment existing plants at Port Harford and Oleum.

It has also been deemed both prudent and necessary to largely increase our holdings of oil-producing lands, a step which has been speedily vindicated by the bringing in of the Bastenchury well, which at a depth of 4444 feet produced oil of a very satisfactory gravity and in volume of fine promise. The chief value of this well lies in its confirmation of the judgment of the Geological Department in the heavy purchases of land recently made in Orange County augmenting the aggregate of lands held by this company by a large area of proven land of great value.

CLAIM JUMPERS OUSTED.

Much excitement was occasioned in oil circles recently when it became known that a number of "claim jumpers" headed by C. L. Lyman, a Goldfield operator, had occupied a section of land in the Buena Vista Hills, held and being in the possession of the Honolulu Consolidated Oil Company, of which J. A. Pollard is the Superintendent.

There were some fifteen or twenty men "armed to the teeth" (as usual), who set up housekeeping under Lyman's instructions with all the luxuries of a camp in a desert where the heat in the sun is only about 150 degrees. It was not long before Superintendent Pollard arrived on the scene with a following about twice as strong as that of the invader. A pitched battle did not follow. The guns of the enemy did not blaze. In short, the occasion would not make a good scenario at all. The enemy ignominiously evacuated the premises. However, that was by no means the end. Mr. Pollard and numerous John Does and Dick Roes were soon arrested on warrants charging battery and, strange to say, were released on their own recognizance. However, this was only the beginning of trouble. Stories have appeared in every paper in the oil regions, of new aggressions by "jumpers," who, it is claimed, are being backed by rich San Francisco capitalists. It is feared that this mix-up, caused by peculiarities of our laws, will result ultimately in very serious trouble indeed, nothing less than bloodshed being anticipated. As a sort of culmination to the arrest of Pollard et. al., two suits were instituted by the "jumpers" in the United States Circuit Court, the decisions of both of which will have very far-reaching effects, in that the legality of Secretary of the Interior Ballinger's withdrawal of last December will be decided.

The suits are C. L. Lyman and others against the Honolulu Consolidated Oil Company, Parker Barrett and O. O. McReynolds. The plaintiffs in the two suits differ somewhat in their personnel. The plaintiffs bring suit asking for an injunction against the defendants to prevent them from interfering with their work in drilling wells and developing oil property, the land involved being the south half of section 8, 32-24. This is the land involved in both cases. The value of the land as it now stands, is placed at $100,000, but if patented it would probably be worth 500,000.

Two questions are involved: First—Until there has been discovery of oil, the lands are open to exploration and development by any citizen who is qualified to make a location, without interference from any prior claimants or locaters.

Second—The important question involved the contention that prior to the discovery a conveyance by locator of his rights operates as a relinquishment, and no rights are acquired by a person to whom the conveyance is made.

It is understood the object of the suits for the injunction just filed is to bring the matter to a head for the protection of everybody's rights, and not to attack the rights of others. When the summons are issued on July 11th, a notice will be is reported a large producer; thought to be in gusher class.

PRODUCERS TRANSPORTATION COMPANY.

The Producers Transportation Company has started work at San Luis Obispo, on its tank "farm," two mammoth reservoirs for the company, each of which will have a capacity of 1,200,000 barrels, being now under construction. At the present time grading is in process and supplies are arriving to push the work. The tanks are to be constructed of reinforced concrete, are to be circular in form, twenty feet in height, 600 feet in diameter and will be built entirely above ground, which is a new departure in oil reservoir construction. Each of the tanks are to cost $115,000. It is expected that they will be completed within ninety days. The rumors of a doubling of the Producers pipe line out of the Midway field is declared to be a little premature. It is regarded as improbable that this work will be begun in the very near future.

DISINCORPORATES.

The Los Alamos Oil & Development Co. has petitioned the Superior Court of the State of California, for permission to disincorporate. The organizers of the corporation are John Barneson, Nathan H. Frank, J. Henry Meyer, Harry J. Hart and N. P. Batcheldor.

The company has been dealing in California oil lands, but the properties it acquired have since become absorbed by other corporations in which a majority of the same parties are interested. There is, therefore, no further reason why it should be continued. The Board of Directors decided to divide what assets remain among the stockholders.

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THAT NONSENSE ABOUT AN "OIL WAR" WHICH WILL BE "NO PINK TEA AFFAIR."

A boomerang has been hurled into oil circles. A bomb has been exploded which is supposed to have caused general consternation. Desire for sensation has created a temporary tempest in a teapot. However, boomerangs have been known to return and decapitate the heads of the hurlers. Men there are who have been "hoist by their own petard." A desire for the sensational has wrecked the path of many an upward climber, whether it was an individual or a newspaper. All of which is preliminary to, and directly bears upon a scare story which recently appeared in a weekly oil paper in Bakersfield, in an oil paper which, by many a bizarre method, has sought to attract attention to its flambouyant headlines. This paper, notwithstanding the fact that it has heretofore posed as the weekly bulwark of the independent operator and of the Independent Agencies of this State; this paper has come out with a ridiculous story which cannot help but harm the industry generally; a story which has really little foundation and which it was ill-considered on the part of our contemporary to give space to. Yet, this story has gone the rounds of the press, has reached England and other investing centers which are considering California, and has doubtless done harm where those interested were not as well acquainted with our contemporary's methods as are California operators.

Immediately upon the publication of the story of the "war" which is "no pink tea affair," we sent a special representative to the three marketers who are supposed to be cutting each other's throats in dreadful style, to ascertain the truth of the matter. The representative of the Union Oil Company denied any knowledge of the war except as printed in this very enterprising Bakersfield publication. He styled the story as ridiculous. He scored the report. Finally, he said that the Union was not looking for any trouble and would not be a party to a "war" at this time; and that the Union was selling its oil on San Francisco Bay at $1.00 the barrel

At the Associated it was ascertained that they had made a cut to ninety cents. "It is true" they affirmed, "we have made such a cut, but this talk of a "war" is nonsense. We have made the cut to induce people to sign up with us now that the dull months are here. We reduced our price in like manner last year—and likewise, we may add, we raised it again with the autumn activity. As far as we know, the other two marketing concerns are not fighting us, and we are certainly not fighting them." At the Standard Oil Company's office the story was laughed at. Calling up various parties in the city and around the bay, it was shown that unless long time contracts had been made which had extended for some time since, say a year, or two or three to five years ago, when oil was not selling at its present rate, large consumers were paying $1.00 per barrel for fuel oil.

Even if there were a general fight on, what purpose would it serve to run a scare headline to that effect? Would it not have the direct result wished for by the marketing companies, i. e., to frighten the small producer into signing up with the big companies at a low price on a long term contract? What other possible motive could there be in a cut rate war which cuts only ten cents, when fuel is an absolute necessity and when the greatest company on the Pacific coast, the Union Oil Company, is in a position to flood the market with oil and not even feel it? Can anyone with an iota of intellect believe that concerns like the Associated and Standard are so burdened with money that they have taken pity on the consumer? This is farcical.

Yet the Bakersfield paper comes out with such a sensational break that the whole country is forced to notice their folly. They play directly into the hands of those whom they are supposed to have consistently fought. They betray the producer. They betray the Independent in the Citadel of Indepedndence. What can their subscribers think of such deeds? Can such impossible actions be continually overlooked? We think not. We believe that conservatism, not sensationalism, will be their one best play. The boomerangs will return to fall on their own heads. Their bombs will necessarily explode at their own feet. We hope that from now on they will use more judgment and look less to sensation to keep up interest in their publication. We would like to see them turn and become once again one of the weekly defenders of the independent producer; to sustain a fine record which they made during their first months, and keep away from big type, yellow journalism and empty phrases; and in this we feel sure that the rest of the oil papers in the State, and the men interested in the oil industry, will ardently support us.

THE DEATH TOLL OF THE COAL MINE—THE SAFETY OF THE DRILLER.

In a compiled review of coal mine accidents since 1884, with all statistics which were obtainable, the United States Geological Survey shows that the enormous total of fatalities for that time is no less a number than 30,276, with the figures of the injured reaching 72,585. The causes of death and accidents are gas and dust explosions, powder explosions and windy shots, falls of roof or of coal from above, and various non-catalogued and unobtainable causes. The number of fatalities has been on the increase up and until 1909, when it dropped to 2,142 killed, as against 2,450 in 1908. The darkest record in the history of the industry of coal mining belongs to the year 1907, when for every 145,471 tons of coal mined, some hapless laborer, deep under the earth, lost his life; a fact due in many cases to the criminal negligence of his employers. However, last year was almost a record breaker for maiming and crushing without actually killing the workers. The Geological Report says that last year the number of men injured reached the unprecedented total of 7,979, an increase of more than 1,200 over 1908, and 1908 showed an increase in non-fatal accidents of more than 1,400 over 1907. The report further states that the greatest danger to which the miner is exposed is that from falls of roof and coal; not from explosions, fire or suffocation. Out of the entire number of accidents the percentage of those killed is no less than 44.23. It is a frightful slaughter which is as needless as it is brutal and horrifying, and would seem to shame any country in the world but Progressive America.

However, if coal mines brought death to thousands, there is at least one fuel which is being mined more and more steadily which has had almost no fatalities in its production, which are directly traceable to the dangers besetting the operator who is getting it out of the earth. Deaths reported from the oil fields have been few indeed. Those from accidents will hardly total ten in all the fields for the past year, despite the fact that fuel was mined from them to supply three transcontinental railroads in this State, not to mention other numberless uses to which it is put. The driller has a comparatively safe time; there is scarce a safer occupation. He rarely falls from the derrick, and if

he does it is generally his own fault. Accidents are far between, although they do happen. After looking over the gruesome list of the killed and wounded in coal mines, it is with relief and pleasure that the oil operator can turn to his clean business, knowing that those who work for him are safe from accident and other than normal deaths; that his employees receive a fair salary and are not ground into pulp thousands of feet below the surface of the earth for a paltry $1.75 or $2.00 per day; that his men do not need to live in either squalor or dirt, and that on the whole, as a producer of petroleum, he is engaged in one of the cleanest occupations which is to be entered into.

FALSE PROSPECTUSES HURTFUL TO OIL INDUSTRY.

All is not oil that's oily. During the last twenty days we have received a number of pamphlets from newly incorporated companies. We are assured by these prospectuses that the companies will meet with nothing but the most cyclonic gushers ever encountered, for, it is argued, are they not in the middle, the very center of the Gusher Belt? Does not the Lakeview border one side? Do not the Pioneer Midway and Mays spout their very best on the other? Who can tell to what unprecedented lengths in gushing their expected well will go? When we say expected, we make a mistake: Their absolutely assured well, their already-not-yet-but-soon-well will make the owners of the great Lakeview utterly sick and green with envy. A number of prospectuses lie before us. They read, on the whole, in this wise:

"We call the world to remember this: There is no telling just how big our new well will be; but we all confidently expect that it will be the biggest well the world ever saw. Now, gentlemen—that is, you deep thinkers who are favorably considering investment in the Petroleum Corporation, Consolidated and Ltd., the only trouble, if indeed it can be called such when it is so immaterial a matter, the only trouble with this well is that we are not yet far enough down. We are started; but we have not yet reached the thick sands which we are confident are underlying, in all their richness, our properties only. We do not wish to take in any outsiders but now find it necessary to let in a very select few. We wish these few to learn how they, too, can get rich quick and without deep investment. A few cents now means hundreds—nay, thousands—but a short time hence. It is therefore necessary to tell such astute persons as yourself, the reader, just what we propose to do: We propose to go DEEPER! Mark that, now, as there is no telling how much deeper we will go; it may be to China. But, to go DEEPER, we must have a little more readily available money, as (unfortunately) it costs money to drill and make a showing. We have our materials on the ground. We have had them on the ground ever since we brought out the last company which became discouraged here and quit the very finest oil-producing stretch of land in the world. The only step for you to take, as an investor of excessive insight and money-making intuition, is to come along with us and be convinced of the soundness of our proposition. And, if we don't then get your money in the twinkling of an eye—you are a Jonah and do not understand High Finance!" Or, it may be that the prospective buyer understands it only too well.

Then we have another kind of prospectus. This is the kind that represents the genius who writes about the "utmost audacity in prospecting." It begins in this manner:

"Note this: There are only a certain number of shares to be issued. And, no one without superlative courage can enter this oil company and stay with it, as it will take at least a year and a half before there are any chances of getting oil. Mark that: A whole year and a half! Now, please don't think, under any consideration, that we believe you, a man of sterling worth, have a lack of courage and backbone; we feel sure that you are a most daring speculator and that you have the money to let out; but there are doubting Thomases, and to these foolish persons, who do not seem to comprehend what a mar-rar-velous opportunity we present them in this new stock, we must explain that we are allowing them to get in on the sub-cellar floor, and that when the ground floor price is finally reached they can sell out at an unheard of profit, providing they are desirous of awaiting the e-e-e-normous dividends which this investment promises to the man of grit, business enterprise and the afore-mentioned sagacity which invariably marks men of large affairs. Mark you this again: It is not actually assured that you will have to wait an entire year and a half; we may get a gusher inside of three months. But, we must address ourselves to men with the strength to possess their souls in patience while the drill and their money are being sunk rapidly into oleaginous depths—in the ground and in our pockets, respectively.

"We said, in the opening statement, that it would take a man of iron will and great daring to help finance this scheme; we really meant that it would take a coffer of gold and a gold brick dupe. You see, this proposition represents the very highest kind of high finance, and promises from 1,000 to 1,000,000 per cent profit to the promoter. It is true that the prospective stock purchaser takes chances of a grave nature; but chances for return are so vastly greater and so very much more enticing and pleasant to contemplate that we feel assured nobody will look upon the cloud, but rather upon the silver lining. Mr. Slick, our Frisky Agent, who is a marvel at telling the whereabouts of oil, especially if he is in an oil region such as a place between two Standard Oil tanks, is positively assured that we will get oil in marketable quantities. Mr. Slick, it will be remembered, financed the Golden Fleece Nevada Come-talk, and met with enviable success. There is no getting away from the fact that he is a money winner—for himself. Then, there is that element in his nature which we all value so highly—an absolute disregard of personal loss; when it is the other person. We feel assured, as we have before asseverated and averred and in divers other ways, verbally expressed, that we will get a huge profit for you.

"The greatest people in the world are those unafraid to dare; to risk all for all, who have the acquisitive instinct. We chose to send this prospectus to you, reader, because we know that you are a man of iron will, and that you will not stop at a few paltry dollars to get a fortune.

"It is true that we are exploring the hitherto unexplored. It is equally true that others have failed to get oil because they didn't go deep enough. It is true that it takes a man of iron to see his money drop into the holes in our Frisky Agent's pockets. It is true that this represents a Splendid Hazard: But, O! isn't it GRAND? Would you not take the chance? Think of the daring in drilling away out in the hills where others, even the great corporations with MILLIONS are afraid to drill! Marvelous! Marvelous! Don't Stop: Don't hesitate: Don't do anything: RUSH, RUSH, RUSH! Get the virus! Get the Frenzy! Let US get YOUR MONEY! Hurrah, etc., etc."

The above pattern prospectuses show in a mild sort of way what can be expected if one starts to read all that is thrust upon him in these oily days. The writers of them have probably never seen an oil field. But, they have the jargon down to the last iota of an idea. They know how to lend an eclat to the general ensemble that is positively dazzling to the unitiated. There is in their matter that indefinable something which tells us that we are the only and original financiers; we are Napoleons of Trade; Harriman is bested; as for Uncle John D. Rockefeller, he is an old fossil who never did understand the art of money-getting. Summarizing, we find these get rich quick prospectuses containing, in a few words, the following only:

"Get the virus! Get the frenzy! 'Struck Oil' will be the next word! Buy NOW. Our stock is soaring, soaring, soaring!" etc., etc. Possibly it is soaring still. "There is no telling."

Thus are good prospects ruined by some few fakers, the fields generally harmed in the eyes of outsiders. It is a shame that these harpies can have carried out their programs for as long as they have. Now that the Government is at last getting after them it seems that there is a chance to place them, once and for all, out of their nefarious "business." The new prospectus will not, possibly, be quite so entrancing and dazzling in its hopes and future; but it will be much safer and saner, and in all ways more reliable.

PICKETT BILL NOW LAW.

Withdrawals Made Under New Act.

The Pickett land bill, or withdrawal bill as otherwise known, has been signed by the President and is now a law. Its text relating to the withdrawal of oil lands, as passed and approved, reads:

"That the President may, at any time in his discretion, temporarily withdraw from settlement, location, sale or entry, any of the public lands of the United States and reserve the same for water-power sites, irrigation, classification of lands, or other public purposes to be specified in the orders of withdrawals, and such withdrawals or reservations shall remain in force until revoked by him, or by the act of Congress.

"Sec. 2. That all lands withdrawn under the provisions of this act shall at all times be open to exploration, discovery, occupation and purchase under the mining laws of the United States, so far as same apply to minerals other than coal, oil, or gas, shall not be affected or impaired by such order, so long as such occupant or claimant shall continue in diligent prosecution of said work. And, provided further, that this act shall not be construed as a recognition, abridgement or enlargement of any asserted rights or claims initiated upon any oil or gas-bearing lands after any withdrawal of such lands made prior to the passage of this act.

"Sec. 3. That the Secretary of the Interior shall report all such withdrawals to Congress at the beginning of its next regular session after the date of the withdrawals."

Following closely upon the signing of the Pickett Bill, President Taft signed orders of withdrawal covering 8,495,731 acres of petroleum, power-site and phosphate lands, 2,482,750 acres of which are petroleum bearing lands withdrawn in California. This withdrawal merely covers the withdrawals last September, and is virtually an admission that Secretary Ballinger's withdrawal act of the 27th of that month was not legal, in the opinion of some of the foremost oil men and legal advisers in the State. This should greatly clear the troubles of locaters in the Midway field. Total petroleum land acreage withdrawn in the United States by the President is: Arizona, 230,400; California, 2,482,750; Colorado, 78,474; Louisiana, 314,901; Oregon, 74, 849; Utah, 581,564; Wyoming, 255,461.

The Government withdraws all oil lands yet in its possession in the Sunset-Maricopa-Midway-McKittrick oil fields.

THE PYRAMID OIL CO.

The Pyramid, when last reported, had spudded in its first well on section 26, 31-22, Midway, and was rigging up on Section 18 and 30, 32-25. In all, ten rigs will be working shortly. The Crown, leasing from the Pyramid on section 30, 32-25, is being drilled with a rotary.

NAVY ALREADY USES MUCH OIL AS FUEL.

U. S. Senator Perkins of California, has transmitted a letter to the press which he recently received from Secretary of the Navy, Geo. Von L. Meyer, in regard to the use of oil as fuel in battle ships. The letter is as follows:

"Department of the Navy, Washington, D. C., June 21, 1910—My Dear Senator: Your letter of the 17th inst., relative to the use of oil as fuel on naval vessels has been received.

"In reply I would inform you that oil is used as fuel quite extensively on the vessels of the Navy more recently designed. In the case of the latest destroyers, oil is the only fuel used, while in the later battleships both oil and coal are used under boilers.

"This fuel oil is purchased by annual contract, and is advertised for, and bids submitted in the usual way.

"The battle-ships fitted for fuel oil carry about 400 tons each, and the torpedo-boat destroyers about 210 tons each. There are at present built and building, fifteen torpedo-boat destroyers and six battle-ships, using oil as fuel. To fill the oil tanks of these vessels would require about 6150 tons, and, of course, the amount of oil used would depend upon the rapidity with which the tank supply was exhausted.

"In regard to the Delaware, I would state that this vessel is fitted to burn both oil and coal. I regret very much that I have not a photograph of the Delaware which I could forward you, but you will find a very good one in the Journal of the American Society of Naval Engineers for November, 1909, Vol. 21, No. 4.

" As to the probable extent of the use of oil as fuel in the future of course I am unable to state. At the same time, all indications point to its continued use.

"Trusting that the above remarks will furnish you with the desired information, I am, faithfully yours,

"GEORGE VON L. MEYER."

EXPORTS ON THE WANE, AND THE WHEREFORES.

The Petroleum Review, published in London and edited by Dr. Paul D'vorkovitz, publishes the following in its issue of June 18th:

"The official returns of the petroleum exports from America during April are by no means satisfactory. We are well aware that there are always fluctuations in regard to the bulk export of petroleum products, caused in many instances by the position of the tank fleet, yet making due allowance for this, one cannot shut one's eyes to the fact that American petroleum products are finding it increasingly hard to keep a strong position on the world's markets. The figures of exports for April, which we give upon another page in this issue, are conclusive. They show a decline in the quantities of both crude and every kind of product, and compared with the exports for the corresponding month of last year, display a deficit for the month of almost two million dollars in value. The exports of illuminating oil for the month were ten million gallons less than a year ago, and the total export was decreased by approximately 23,000,000 gallons. As we say, these latest figures of America's petroleum export trade are in no way satisfactory."

Our readers must bear in mind when they scan this that Dr. D'vorkovitz is booming Maikop, on the Baltic, with all his power, and is working incessantly to enlist the interest and aid of British capital in that district. It is doubtless somewhat disheartening and disconcerting for him, when in the face of all that can be said and done to enlist British capital in Maikop, the conservative and wise subjects of Great Britain who take any interest at all in petroleum, invest their millions in the oil fields of California. Another matter of great importance to be considered is that we can afford to lose this trade in many more ways than one. In the first

place, America has now supplied Europe for over forty years with the major part of its petroleum in all its forms. A more cogent reason still for allowing the exports to fall off is that we have in America only a certain amount of oil. Why give it all to Europe at a low price and in the future be compelled to import oil at an exceedingly high figure for our own consumption? Is that reasonable or wise? But, the real reason why our exports are falling off is neither of these: the reason is that American interests own enough petroleum producing lands abroad not to need to send their home product to a foreign country, often in the face of stiff competition and always at a disadvantage. They can outsell the foreigners in their own fields and keep the finest oils in the world in America, where they are produced.

THE OILS OF VENTURA COUNTY.

By Henry J. Jory, B. S., Consulting M. E.

(NOTE.—Mr. Jory has been studying the Ventura district for seven years and will write a series of papers for the California Derrick giving his views in regard to this great field. Following is the first brief paper.)

From the Earliest history of California, oil springs have been noted in the sea off the coast of Ventura County, and the first examination of the interior disclosed immense seepage belts of crude petroleum, great asphaltum and tar beds, and all the surface indications that go to make up a wonderful oil region. In the early days of the oil industry, shallow wells were drilled on these seepages with the crudest of appliances, such as spring poles and ordinary well tools. These never failed to reach large quantities of heavy black oil, for which in the early days there was no market. As the petroleum industry developed in California, and with the advent of modern rigs, and particularly with the knowledge of how to drill many of the steeply inclined deposits, vast quantities of high-grade refining oils were developed all over the County. The typical Ventura oil is very light brown in color with a sweetish, pleasant odor, and is nearly all gasoline and lubricants of high grade. Needless to say, it commands the highest price of any oil produced in California. The plan has been hitherto to locate upon a prominent seepage, showing where the oil sands were cut by the existing canyons, and then to drill further and further back upon this known formation, resulting in the bringing in of deeper wells, but with a lighter and more valuable oil. As now developed, Ventura County is fitted to lead the world in the production of the more valuable of the petroleum products. A great system of pipe lines radiate to all parts of the County, with immense storage reservoirs at the sea-port of Ventura. From this point the oil is carried in a large fleet of tank steamers to the Northern Refineries. So great is now the demand for such lighter oil products as gasoline and engine distillates, that even the entire production of Ventura is not able to supply the demand, and the Standard Company has been compelled to import ship loads of naptha from the Borneo fields for conversion into distillate and gasoline. Notwithstanding that the grade of these two products is constantly decreasing, the price increases constantly and must finally reach a point when its cost will be prohibitive to most consumers. Therefore it is certain that the owners of Ventura County wells must reap large and certain profits for many years to come. The great bug-bear of over-production of fuel oil, which appears from time to time in other California fields, has no bearing on Ventura. The highest prices, at least double that commanded by the San Joaquin Valley oils is obtained right at the wells, and Refiners are anxious to contract all the product at this figure for years to come.

(To be Continued.)

OILPORT REFINERY.

J. C. Yancey, general manager of the Producing and Refining Company, is quoted as saying the large refinery which the organization owns at Oilport, will be placed in operation in ninety days.

TWO KINDS OF BUSINESS POLICIES.

There are two kinds of business polici s pursued by newspapers. One seeks to destroy; the other to upbuild. One seeks to bring discredit by every conceivable means, the other to aid wherever it reasonably can. One fosters industry and energy; the other knocks and kills both. One is afraid lest it should advertise an enterprise by mentioning it and, forgetful that there are only a certain number of people who have any enterprise at all, and who are capable of carrying out a good business policy, never mentions that which is the mainstay of the country—enterprise and business ability—except in derogatory terms. Which does the average man care to patronize; the paper which is forever bearing industry, or the paper which takes a legitimate pride in the noble work of upbuilding and helps it along? We think that there is but one true answer to this. Therefore it is with pleasure that we turn to the good column run in the interests of the oil industry of this State which appears in the San Francisco Chronicle, daily. The Chronicle has the oil men's support.

ABSURD TYPOGRAPHICAL ERROR.

In an article entitled "Price of Oil Must Advance," written by the editor of this magazine for the June Number, it was stated, through some queer typographical error and later oversight of same, that California was using 60,000 barrels of fuel oil per day. Of course every operator in the State of California knows that the actual consumption of fuel oil is not less than 183,000 barrels per day and consequently the dazing news that California consumed all of 60,000 barrels every day must have caused a smile to cross the face of many a reader. It was simply one of those easily made and almost always ridiculous errors which creep into print even in the most carefully made up magazines. However, it was not allowed to pass unchallenged by some, and we hope that this will fully satisfy all concerned.

"OIL FIELDS OF THE EMPIRE."

A survey of British imperial petroleum questions and a comprehensive technical description of the oil fields of Trinidad and Newfoundland, has just been issued by Bradbury, Agnew & Co., Ltd., of London, England, the work of the well known British petroleum expert, J. D. Henry.

Mr. Henry is the editor of the Petroleum World, probably the foremost English petroleum magazine. He is the author of many papers on petroleum, including "Baku—An Eventful History"; "Thirty-five Years of Transport"; "The Evolution of the Tank Steamer"; "Oil Fuel and the Empire", and other fine works. With Mr. Henry's name is associated that of Sir Boverton Redwood, probably the foremost of all British writers on petroleum. The book is dedicated to Sir Boverton Redwood. The prefatory notes are by W. H. MacGarvey, an authority of eminence; Sir Edward Morris; Professor Zuber and other well known petroleum men of note. "Oil Fields of the Empire" is beautifully illustrated. The writing is of the very highest description. The work is much done in detail, and commends itself to the thinking person as something absolutely necessary to those interested in the oil resources of the British Empire. The writer, Mr. Henry, is the most constant advocate of British-produced oil fuel for the British Navy which the Empire can probably claim. While Mr. Henry makes a very modest statement and apologizes almost overmuch for the deficiencies of the volume, there is no doubt that his readers will find "Oil Fields of the Empire" one of the most interesting oil treatises that has appeared during recent times.

THE ORIGINAL GUSHER D

Showing the properties which first called general attention to the remarkable region which later gave to the world, the Lakeview Gusher. In the foreground, to the ri
Behind this property is that of the Monte Cristo, for which $2,000,000 was recently offered. Further East than here shown are the big wells of the Maricopa National,
Maricopa Flat has shown it to be one of the most prolific stretches of oil land known.

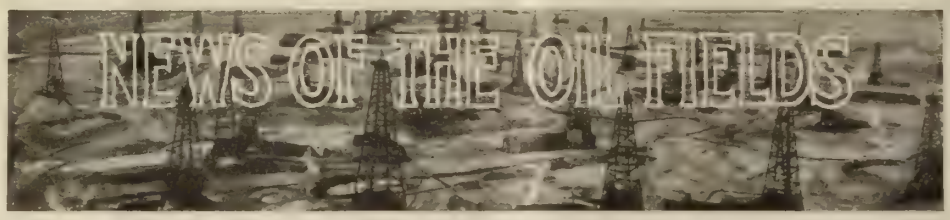
THE LAKEVIEW GUSHER TODAY, AFTER DELIVERING 5,700,000 BARREL
saving the oil was adopted. Note the beach, with the oil waves beating upon it fr

RICT AT MARICOPA, CAL.

wells of the famous Ethel D. Oil Company; further removed, the Wellman Property. To left of foreground, K. T. & O. Well, No. 25, flowing a big stream of oil. Midway, and Cons. Midway oil companies and the properties of La Blanc, Buick, Yellowstone, Cal. King and Lady Washington Oil companies. Development of the

(Photos by C. C. Wright)

OIL. Showing an escarpment of bags filled with sand surrounding the titanic oil geyser. All efforts to control the gusher having proved unavailing, this method of ocean. The oil flows away through huge conduits to mammoth storage reservoirs.



Reported by
Special Field Representatives
of the
California Derrick

COALINGA—By Guy H. Salisbury

Coalinga, Cal., July 7, 1910.

The American Petroleum Company have a big well on section 30, 20-15,. Well No. 9 came in about July 20th, and was finished at 2330 feet in a very rich sand,. The well started off at 300 barrels per day. Each time the well was cleaned out she increased her flow, going to 1000 barrels per day, and then to 5000 barrels per day. Manager Tom Crumpton kept well under control all the time and today it is estimated as doing 10,000 barrels per day. The well was not allowed to flow over the top of the derrick. She began to cut away the lead lines and then the casing. Manager Crumpton has the we.. muzzled with a pile of iron protectors ten feet high, and estimated to weigh about twenty tons. The force of the gas and oil is broken as it strikes the sharp edges of the protectors, so does not have the force on the weight of iron it would have if it struck in a solid body. The well is flowing through the 8¼ inch casing with a roar of a great blow-off. The pile of protectors over the casing head and on the floor of the derrick are 10 feet high and more is being hauled and the pile increases. The stream of oil flowing from the well, as it passes from one earth reservoir to the other, is 36 inches wide by 30 inches deep. The gravity of the oil is 16-B, the finest of the fuel oil. There are two 7½x5x6 inch line pumps, with a capacity of 5,000 barrels per day, now relieving the reservoirs, pumping to the steel storage tanks. One line pump, 10x6x12 inches, is being installed, capacity 10,000 barrels per day to meet any emergency. As said, the well is under perfect control at present.

The Cream Petroleum Company, section 30, 20-15, are about 1200 feet deep with rotary, an average of 100 feet per day from date of beginning. The strata of loose cobbles are about 50 feet thick in this formation. The regular formation in this section is very favorable to the rotary system, and should be carried to 1,800 to 2,000 feet and shut off the water. The sand at this point will be about 2,400 feet. The Parker rotary is used on this well and has done very satisfactory work; Having a supply house here enables the operator to replace worn parts without delay.

On the Coalinga Consolidated Oil Company, section 18,21-15, well No. 1, operations will be resumed this week. Manager Spurling has a new crew and all arrangements are made to shut off the water. The last water sand entered proved a flowing water sand. Parties acquainted with the conditions surrounding the Commercial well, about 1,000 feet north, state that this is the water sand that the Commercial entered before going into the oil sand.

The United States Oil Company, a new one in the Devil's Den District, has secured a lease from the Devil's Den Consolidated Oil Company to develop 20 acres of its holdings in township 25 south, range 18 east, with clause conveying title to the 20 acres, which will prove up the 160 acres upon which the well is drilled. Considerable activity is shown all over the Devil's Den District, covering a range of territory from 10 to 16 miles wide. The new company has material on the way to build rig and buildings.

The Warthan Oil Company, operating on section 33, 20-13, just west of the Fresno Hot Springs, is 450 feet deep with 12½ inch casing. Formation black shale with seams of sandy clay, occasional showings of gas, but no water so far. Superintendent C. Root reports the work progressing satisfactorily; the seepages in that vicinity and the old well drilled into the sand, show an amber oil of 41 gravity. This is the sand that the company is making an effort to reach.

The Coalinga National Petroleum Company, section 8, 20-15, have a splendid well in No. 1. Expert parties who have visited the well, and made estimates of the production, report the well doing better than 500 barrels per day of very clean oil, a little sand is bothering occasionally, but no water or salt is found in the oil.

The Baird Oil Company, section 24, 22-18, have cemented off the water at 2,465 feet with 6⅝ inch casing. Cement Expert, Tom Hayes, reports a good job on the well. This will be allowed to set for about 15 days before the cement plug will be drilled out, and the well sunk into the pay sand. Reports continue to come in from that section of country indicating that the showing made in the well before cementing is very good, and would suggest a well at about 2,550 feet depth.

The Camwell Oil Syndicate, operating a lease from the Octave, on section 22, 19-15, finished well No. 7, in 6⅝ inch casing at 1,535 feet. The well is on the beam, making about 150 barrels per day. Well No. 8 is 1,210 feet deep with 10 inch casing; the water will be shut off at about 1,260 feet. A standard rig is completed for well No. 9 and will be rigged up this week.

The Coalinga Unity Oil Company, section 12, 20-14, has pulled the casing out of well No. 3. This is the well that tapped a large gas pocket and then caught fire, one of the most spectacular sights seen in this field. The gas has been exhausted and the well will be finished into the oil sand. Well No. 4, is making about 250 barrels per day.

The Coalinga Red Top Oil Company, section 6, 21-15, are over 2,600 feet deep and are in the oil sand. This company has had a struggle through adverse conditions for nearly two years. A little over a year ago, on June 3, 1909, Nevin Walp was killed by a premature discharge of giant powder at the top of the hole, in an effort to shoot an underreamer out of the way at the bottom of the well.

A report printed in one of the County papers, speaking of oil news, reports a new company incorporated to operate on section 33, 13-18, located in the artesian belt, six miles west from Ormus, on the Southern Pacific, 36 miles northeast of Coalinga.

PETITION FOR GOOD ROAD.

A petition for a good road from Coalinga to Kings River, making a continuous road from Coalinga to Lemoore, has been prepared by Z. N. Phelps, and will be circulated in Coalinga, Hanford and Lemoore.

STAGE LINE.

A new stage line automobile service has been inaugurated throughout the Coalinga field.

WELLS OF RECENT DATE.

Essex Oil Company.—Well No. 1, on section 6, 11-23, Maricopa, on the flat, obtained about the middle of June, oil of 20 degrees gravity, estimated at 5,000 barrels.

Hale-McLeod Oil Company.—Well No. 4, on section 5, 32-23, Midway, began producing at a rate of 15,000 barrels per day; now capable of producing 5,000 barrels per day. Oil of good gravity.

Pacific-Midway Oil Company.—Well No. 1, on section 32, 12-23, Maricopa,, on the Obispo lease; also on the flat two miles east of Maricopa, finished at 1680 feet. Oil of 20 degrees gravity. Well good for at least 2,000 barrels per day.

Maricopa National.—Well No. 1, finished in June, on Northwest quarter of section 6, 11-23. Came in at 12,000 barrels and is under control.

Consolidated Midway.—On section 30, Maricopa, on land adjoining the Lakeview gusher on the East. Reported good for about 15, 000 barrels of oil per day.

Honolulu Consolidated Oil Co.—Well on section 4, 32-24, production unknown. A heavy gasser.

Standard Oil Company.—The new well on section 20, 32-23, is reported good for about 250 barrels per day, only. Well No. 2, section 14, 32-23, is reported to be a large producer although no particulars are stated.

American Oilfields Co.—On section 16, 32-23, a new well at 1400 feet, oil of 20 degrees gravity, said to be a large well. On section 36, 31-22, well No. 5, has been brought in and is said to be good for 300 barrels per day, only.

Wells No. 56, 68, and 74 have also come in at respective depths of 1900, 1100 and 1040 feet. Production not stated. American oil fields are holding back wells now in order to keep the market firm.

Reward Oil Company.—Another well was added to the Reward's list of producers during June, No. 23, on their lease at McKittrick. Finished at 1120 feet, and good for about 170 barrels per day.

Coalinga-Unity.—Well No. 4 section 12, 20-14, Coalinga, was recently finished at a depth of 1158 feet, and is good for about 400 barrels daily. Gravity not stated, but it is likely to be a very good oil.

California Hills Oil Company.—Well No. 3, on the southwest quarter of section 3, 11-24, Maricopa, finished at a depth of 540 feet, is good for 170 barrels per day on the pump.

Midway Northern Oil Company.—This Company is reported to have brought in a large well on the northwest quarter of section 32, 12-23. Exact production not stated.

American Petroleum Company. — On section 30, 20-15, Coalinga, well No. 9 of this company, came in at a 300 barrel clip, now making 5000 barrels per day, getting larger steadily.

New Pennsylvania Oil Company.—In Cat Canyon, Santa Maria, the New Pennsylvania has brought in a large well, producing high gravity oil, which was finished at a depth of 3555 feet.

Patricia Oil Company.—Patricia's well No. 6, brought in recently in the Kern River field, is said to be a good well, production not stated.

Madison Oil Co.—Well No. 1, of the Kern River lease of the Madison Oil Company has been finished at a depth of 904 feet after passing through 140 feet of good oil sand. It is reported a very good well.

Coalinga National.—On section 8, 20-15, Coalinga, just finished in June. Production and quality good.

Coalinga Crude.—On section 26, 20-15, Coalinga, just finished. Very satisfactory.

Bear Creek O. & D. CO.—On section 14, 32-22, well No. 4 finished at 1700 feet after passing through 700 feet of sand. Well large and quality said to average with district.

Standard Oil Co.—Well No. 2 of the Standard, on section 14, adjoining the town of Taft, has just come in at 3,000 feet and is reported a large producer; thought tb be in gusher class.

REPORTED STANDARD STRIKE.

The Standard Oil Company is reported to have made a strike in the upper portion of the Bitter Water Valley, about fifteen miles from Kings City. This strike has stimulated interest in the Lomak district, and many companies are reported to have become encouraged enough to begin or continue discontinued operations.

GERMAN CAPITALISTS INTERESTED.

German capitalists are looking for good oil land investments in this State. The only stipulation which they make is that the owner of the lands to be purchased shall be a director in the company and own at least 5 per cent of its stock.

CLAIMING ATTENTION.

San Miguel is again claiming attention of the oil investing public. The oil fields of the Orange River Colony (South Africa) are said to be looking up from a commercial point of view.

CONTEMPLATING A BIG MERGER.

Huge plans for the reorganization of the three largest marketers of California oil are said to be in contemplation, including a merger, a flotation of an enormous bondage and oil security, the alleged purpose of which is to absolutely dominate the market; to cause every railroad in the United States to consume our product at an enhanced value, and, of course, through the marvelous machinations of Wall Street financiers, (would anything damn such a project more quickly?) to make the country gobble up the securities and provide an enormous dividend payer. We think it hardly likely that such a scheme is at all probable under the present condition of affairs.

ARIZONA STRIKE.

An excellent oil strike is said to have been made about 18 miles from Swansea, Arizona, by a man named McGarr, who, with associates immediately located claims of 160 acres each in the heart of the newly discovered territory. The field is said to be eighteen miles in length, the width being as yet undetermined. The news despatch announcing the find says that all indications point to oil in unlimited quantities. As soon as the find was made public by the filing of the locations a stampede took place which rivaled any mining rush ever seen in Arizona.

BIG MERGER.

Twenty large companies located in the Osage district, Okla., and having a combined oil production of 200,000 barrels per day, are reported to have merged themselves into one company, which will market and transport as well as produce oil. This savors of California independence. Certainly there is almost no precedent for it in the East.

COAST PIPE LINE.

The Refining and Producing Company, which acquired recently the Oilport Refinery and Alliance property in the Santa Maria field, is obtaining a right of way for a pipe line that will connect with the Santa Maria Port Harford line.

EAST SAN EMIDIO.

Operators in the most Southern extension of the Sunset region have decided upon the name "East San Emidio" for that portion of the country.

BREVITIES FROM SANTA MARIA.

The tanks belonging to the Refiners and Producers Company, whose plant is located at Port Harford, are now filled with agency oil, piped in from the Coalinga field. The storage was leased shortly after the Yancey people and Henry Crocker formed the merger and established their big combined company. Rental is at the rate of one cent per month per barrel, and the whole capacity is 200,000 barrels.

The supposition is that the tankage will be available for some time to come owing to the inability of the Refiners and Producers Company to obtain early shipments of materials for the pipe line to be laid from Midway and McKittrick to tidewater.

The Paula Oil Company, which is controlled by a number of the larger stockholders of the Palmer Oil Company, has just brought in No. 1 well of a new series in the Santa Paula canyon, at a depth of 1750 feet, which is producing 200 barrels daily.

The Refining and Producing Oil Company is securing a right of way for a pipe line that will connect the Midway field with Santa Maria-Port Harford line. The route selected is very direct and will make the line approximately eighty-four miles long.

The latest novelty to be introduced into the Santa Maria field is an enormous treating plant recently built by the California Oilfields, Limited. It was constructed at a cost of approximately $60,000, and will treat between 400 and 500 barrels of oil per day. The company installed this plant on its lease in the Lompoc field, where it is within a few yards of one of the producing wells. The oil from this well passes through 13,200 volts of electricity and this process enables the distillate to be drawn from the heavy oil.

The Annual meeting of the stockholders of the New Pennsylvania Petroleum Company was held recently and after listening to the reports of the officers regarding the business of the company for the last year and its prospects for the future, the stockholders elected the following directors: T. R. Finley, Joe McDonnell, L. P. Scaroni, E. Shillingsburg, A. R. Jones, John Houck and Samuel P, Calef.

The newly elected directors immediately met and organized by electing T. R. Finley, President, E. Shillingsburg, Vice-President, Joe McDonnell, Secretary, and L. P. Scaroni, Treasurer.

The annual reports show the company to be in fine condition. They will shortly pay a dividend.

Los Alamos Petroleum, which has been on the pump now for about two weeks shows up better every day. The company has a fine well.

The Obispo Company, a company that never drilled a well but which has yielded a handsome return to its stockholders, will probably go out of business in the near future. At the time of its organization the company owned a large number of acres of fine oil lands near Maricopa. It was the intention to develop these lands, but flattering offers from other parties induced the management to sell a portion of the lands. Then the Obispo Company purchased a rig and was about to drill a well on the remaining tract, but parties from San Francisco made an offer to take the remaining lands at a high price, and when this matter was submitted to the stockholders it was decided to take the offer and sell the lands. The result of the whole thing is that the stockholders have reaped a great advance on the money invested.

OIL IN NEVADA.

Oil has been discovered near Sulphur, Nevada, and an oil rush has started for that district. The oil is paraffine base and was struck at 420 feet, by the Western Pacific Railroad when drilling for water.

SANTA MARIA'S NEW OIL MAGAZINE.

The Oil Review, a monthly magazine devoted to the oil industry of the Santa Maria district, has issued its first number and it is a most creditable work. Santa Maria has long needed some mouthpiece which would speak for a field of its standing, but, supposedly, it has been deemed too expensive a luxury until the present time at least, to support a publication of this description. We are very pleased to greet the new magazine and hope that it will be a lasting credit to Santa Maria. It ought to meet with general approval and we hope that support will be generously accorded to it.

WESTERN CONSOLIDATED.

The Western Consolidated Oil Company, organized under the laws of Arizona, with holdings near Bullard, Fresno, County, Cal., is to be reorganized shortly and will become the Western Consolidated of California.

LAND SALES OF RECENT DATE.

Associated Buys Pioneer Midway.

By far the largest transaction in oil lands in some time was consummated during last month when the Associated Oil Company purchased outright the entire holdings of the Pioneer Midway Oil Company on section 30, 31-23, Midway, for $3,000,000. This is a very rich section and the price paid is the highest yet recorded, being more than $5,000 an acre. Immediately upon completion of the transaction the Pioneer Midway Oil Company, Consolidated, was formed to take over the property. I. Strassburger, ex-president of the Pioneer Midway, is a director in the new company. He has taken a portion of the purchase money in stock in the new company. Mr. Strassburger's reason for selling out his magnificent holdings is given as a desire to rid himself and company of the burden of caring for the product of such an enormous producer as the Pioneer's well was and as the new wells of the new company will in all probability be. The company holds title to the entire section, but 120 acres is under lease for twenty years, leaving 520 acres in fee. Of the purchased properties it was recently said by a conservative contemporary:

"The Pioneer Midway has two wells drilled, of which No. 2 delivered to the Associated on contract 100,000 barrels in seventeen days prior to the sale. At this rate the one well is producing close to $100,000 per month, figuring the oil at 50 cents net. The Mays well is also on this section, and from indications when it was flowing, it will be just as good a well as the Pioneer Midway. A rotary is now being installed at the Mays, to assist in cleaning out and perforating the sands, and within a fortnight it should be a steady producer. Twenty per cent of the Mays oil goes to the owning company. There are two other leases of forty acres, the June and Atlantic Midway, both of which are preparing to drill.

"The Pioneer Midway retains the ownership of a large acreage of good oil lands in Midway, and now has ample finances with which to develop its holdings when the time is considered opportune.

"The purchase of Section 30 adds great strength to the Associated as a marketing concern and it will not be surprising if other purchases by this company are announced. It is also operating extensively in the Elk hills, east Midway, and seems to have adopted a policy of acquiring extensive holdings, which may mean that dividends, so long looked forward to by the smaller stockholders, are to be indefinitely postponed. It owns some of the best producing acres in McKittrick and Kern River, and shows no indication to interrupt a vigorous policy of development, certainly a good sign of the times."

(Continued on page 17.)

COALINGA PROPERTIES REPORTED SOLD TO BRITISH.

Two full sections of land in the Coalinga Oil district, in 30, 19-15, and in 36, 19-14, were announced recently, as having been sold to an English syndicate. The price is not known, but report places it at various figures between $850,000 and $4,000,000. Two installments have been paid. The International Land and Industries, Limited, is the company formed to develop the property. Major V. Carter West, of London, confirmed the sale at Fresno.

PETROLEUM INVESTMENT BUYS IN NORTH MIDWAY.

The southeast quarter and the north half of the southeast quarter of the northeast quarter of section 16-32-23, have been bought by the Petroleum Investment Co., in the name of a subsidiary organization named the Petroleum North Midway Co. It is said $2000 an acre was paid for 100 acres in two parcels.

LONDON PETROLEUM BUYS IN NEWHALL.

A deal in oil properties involving a consideration of $185,000 has just been consummated whereby the London Petroleum Company, of which N. F. Wilson of the Lincoln Mortgage and Loan Company, San Francisco, is president, has acquired the Clampitt holdings of sixty-three acres in the Newhall district, and the controlling interest in seventy acres of the Eureka Oil Company. The Clampitt property has nine producing wells, while the Eureka has two on the producing list and others drilling. The oil in the Newhall district is of high gravity, averaging 28 to 30.

WESTERN UNION REPORTED CONSIDERING SALE.

Negotiations are reported to be pending for the sale of the Western Union Oil Company's holdings in the Santa Maria district, to an English syndicate for $2,700,000. The company has 10,000 acres, only the north end of which has been tested.

BRITISH CONSOLIDATED GETS WABASH.

Another large deal has been made in Coalinga, by which the British Consolidated Oil Corporation, Ltd., has purchased the eighty acres of the Wabash Oil Company, on 24, 20-14, with its seventeen producing wells.

The Wabash is a substantial producer, and in the heart of the producing field. Only the lines have been drilled, and the new owners will probably drill up the balance of the area, besides getting the drilled wells up to a maximum production. Captain John Barneson was the principal owner of the Wabash.

The British Consolidated has started a system of numbering the different properties, and they will be known by the following numbers: The Diamond will be No. 1; the Monarch, on section 26, No. 2; the P. M. D. & O., No. 3; and the Wabash will be No. 4. The New Era property will be included with the P. M. D. & O.

CENTRAL PROPERTIES NOT SOLD.

Negotiations in London for the purchase of the Central Oil Company's property here has been declared off permanently. The sale of the property was to have been for $3,000,000, but a hitch in the transaction induced the Central to retire from the market abroad, and the company will it is announced, begin at once the further development of the property.

The Londoners cabled a request for an extension of time for making payments, and the Central's directors declined the request and declared all negotiations at an end.

EXCELLENT MAP OF MIDWAY.

An excellent map of the Midway district has been published by the A. J. Pollak Company, Mining Engineers of San Francisco. It is probably the most thorough oil map ever placed upon the market and is unqualifiedly the best thing of the sort which we have seen recently. It shows under-ground contours of the main producing oil sand, drawn from data furnished by various operating companies in the field and obtained from official records. The oil contours are approximate and are based upon logs of existing wells in the field and are subject to revision. The price of the map is $10.00. It is understood that a great many have been sold at this price. The company which issued this map is getting out a monthly letter which tells of all changes in ownership, new derricks, new wells and other information of value. It is said that their first letter relative to changes in the map will be given to the public upon the 15th inst.

VENTURA OIL DEVELOPMENT COMPANY.

Reports from this company are to the effect that Well No. 2 has passed through twenty feet of sand and seems to have run into the main body at 560 feet, being 580 feet down at the present time of writing. Well No. 3 looks to be a considerably deeper well and it is not expected to get into the main sand before a depth of 750 feet is reached.

HIDALGO OIL COMPANY.

The Hidalgo Oil Company, with about 5,000 acres of oil land in Mexico, is said to be looking for more property although it seems to have been virtually decided not to drill up their property but to hold it pending developments of other operating companies nearby. This is one of Col. Timothy Spellacy's companies, Mr. Spellacy being Vice-President.

PARKFIELD DISTRICT.

The so-called Parkfield district of California, situated in the Cholame Valley, between the Mount Diablo and Temblor ranges, and which is connected with the San Joaquin Valley at its junction with Antelope Valley, and is fourteen miles South of Coalinga, is being wild-catted by San Francisco District Attorney, Chas. M. Fickert, and associates, who, it is said, will develop no less than 3,000 acres of this territory, under the name of the Parkfield-San Antonio Oil Company. Same has been widely advertised.

MAMMOTH ENGINES.

A rating has been given the new 1700-class Mallett engine, which has been assigned to the Bakersfield-Mojave division of the Santa Fe railroad. The great machine is good over the Tehachapi hill at 1100 tons of oil, and 1050 tons for a mixed train. The Malletts are reported to be giving excellent service here.—Bakersfield Echo.

UNFOUNDED REPORT.

The report that the Union Oil Company and the Agencies had contracted to sell 50,000,000 barrels of oil to the United States for naval use was unfounded and generally denied.

GAS FIRE.

The spectacular gas fire in the Standard's big "gasser" on section 30, in the Buena Vista Hills, Midway, was finally extinguished by the use of the steam from a number of boilers, which was turned on the burning well all at one time and suffocated the blaze.

The San Juan Oil Field, Southeastern Utah

By H. E. Peterson, M. E.

The San Juan Oil Field is reached by rail via Dolores, Colorado, thence by stage to Bluff, in southeastern Utah, a distance of ninety miles.

This region, apart from its prolific oil measures, contains rich auriferous gravel deposits and rare stones. A townsite, known as Goodrich, has been platted in the southern limits of the field, adjoining the San Juan river, and a postoffice is about to be established. In the northern part of the district another townsite will be started, to be known as Oil City.

The field begins at a point about 6 miles west of Bluff, according to survey, thence extends westerly 50 miles along the San Juan river; thence 65 miles north and 25 miles south of said river, through the Navajo Indian Reservation, thus exceeding in superficial area any other one oil field in America.

The contour of the district shows a series of hills and eroded basins, with a number of precipitous bluffs and pinnacles. The San Juan river, with its great volume of water and swift current, has worn a deep channel, exposing to view several distinct and intact anticlinal folds and, extraordinary as it may seem, no true synclinal depressions or subsidences appear between the anticlines, the formation being intact along its original plane of bedding, the dip being only 90 feet to the mile. The intactness and position of strata would seem to insure less failure than elsewhere.

The formation consists of alternating layers of sandstone of great porosity, fossiliferous limestone capping, clay-shales and arenaceous shales and is free from faults, fractures and fissures, with two exceptions. One exception is a faulting along the core or axis of the anticline in the extreme western limits of the field; the second is an intrusion of a schistose mass, south of the river, penetrating a minute area without having caused any general or visible disturbance. The anticlines traverse the country from north to south and even beyond the territory herein described indications of oil are found.

Eight distinct oil sands are exposed along the San Juan river, showing a thorough saturation, and several seepages occur; the Honaker Trail seepage exudes from 3 to 4 barrels per day. These oil sands aggregate over 300 feet in thickness, the porous character of the oil-bearing sandrock capped by limestone and shale, forming the most ideal storage rocks known for so volatile a substance as petroleum.

The geological age of the formations exposed ranges from the Cretaceous to the Jurassic, Triassic, Carboniferous, Permian and upper Devonian. On the high points the Cretaceous is slightly in evidence; in the basins the Jurassic and Triassic form the chief exposures. Along the banks of the river, immediately adjoining the Goodrich Basin, the Carboniferous is shown and in the western portion of the field, the Permian and upper Devonian appear, owing to the anticline being tilted to a more acute angle than the ones in the eastern part of the field.

Present development centers in and around the Goodrich Basin, where a number of wells have been drilled to the second or Goodrich sand, to a depth of from 200 to 500 feet. One well, according to Mr. Goodrich and others, at a depth of 220 feet, by actual test, bailed at the rate of 800 barrels per diem. The Galloway Well has been drilled to a depth of 1370 feet, penetrating five prolific sands.

The first well sunk, as described by Dr. Landon R. Ellis of San Francisco, found oil in the first sand at a depth of 170 feet, showing 25 barrels per day. Sinking was continued and at a depth of 220 feet a large flow of oil accompanied by great gas pressure was found in the second sand. The oil was forced up above the top of the pipe a distance of more than thirty feet, and continued to spout for more than one-half hour, when it gradually settled down and flowed gently for several weeks, when it settled down and was held below the surface. After letting it rest for more than a month a thorough test was made for several days and it was found that the well was yielding about 800 barrels of the very finest quality of paraffine oil per day.

The crude oil is a limpid fluid, 38 degrees Baume, paraffine base and burns readily without refining, the ignition being instantaneous on the application of a lighted match. The color of the oil by reflected light is dark green. It contains a high percentage of the volatile oils and is the best refining oil found in the western part of the continent. It should be worth from $2.50 to $3.00 per barrel at the well. It can be used as a distillate, without treatment.

Analysis of the Oil.

It is a pure paraffine oil. The percentage of paraffine contained as shown by the analysis, scale and vaseline, is 12½ per cent of the crude weight of the oil. The sulphur is a mere trace and the asphaltum nominal; gravity of the crude oil 38 degrees Baume; specific gravity 0.837. The percentage of naphtha 12.5 by volume; 11.0 by weight; gravity 63 degrees Baume; 0.731 specific gravity; light burning oil by volume 21.2, by weight 19.9; gravity 51 degrees Baume; 0.778 specific gravity. Heavy oil (burning), by volume 19.2, by weight 19.0; gravity 41 degrees Baume; 0.823 specific gravity. Heavy oils, by volume 43.0, by weight 44.6; gravity 33 degrees Baume; specific gravity 0.862. Cokings and loss by volume 4.1 per cent.

The operators to date seem to have confined their attention to striking oil in the upper sands, so as to prove up their holding, at the minimum of cost and in the shortest space of time. Most of the companies are employing portable rigs, but a few are now ready to install heavy standard rigs for the purpose of drilling to greater depth, in order to penetrate all of the known oil sands in the field.

The geological conditions are ideal, insuring the highest degree of success, while the climatic conditions leave nothing to be wished for. With increasing production and continuous development, railway and pipelines will be constructed into the field, enabling the producers to market the product at a good profit.

Refining oil is becoming scarcer and scarcer, the Appalachian fields are rapidly becoming exhausted, hence the nation must look to the West and Middle West for its future oil supply.

RECENT PATENTS.

The following patents recently granted of interest to the oil trade are reported expressly for **The California Derrick** by J. M. Nesbitt, Patent Attorney, Park Building, Pittsburgh, Pa., from whom printed copies may be procured for 15 cents each:

Well drilling machine, C. H. Waterman, Newport, Wash., 960,459.

Portable derrick, R. B. Woodworth, Pittsburgh, Pa., 960,474.

Apparatus for hoisting tubing, G. W. Oakes, Alva, Okla., 961,420.

Pump, C. A. Waitz, Rouseville, Pa., 961,820.

Method and apparatus for pumping oil wells, J. D. Dinsmore, St. Marys, W. Va., 962,009.

Drive spear, S. S. Frampton and L. J. Bailey, Whittier, Cal., 962,020.

ASSOCIATED COMPLETES WATER SYSTEM.

The Associated has completed a water works system which extends from Buena Vista Lake to their Elk Hills properties, which will also provide water for adjoining leases, says the Midway Driller. A six inch main has been laid direct to their properties which will supply the four inch laterals to the various destinations, and a 270 h. p. engine and boiler and pumps have been installed.

SUNSET MONARCH REFINERY.

The Sunset Monarch's new refinery is almost completed and the company will probably resume business shortly. The new building is completed, the boilers and still are in place and the copper shops alone remain to be finished. This plant was destroyed by fire recently.

ANOTHER LARGE DIVIDEND.

The Imperial Oil Company, which on April 1st transferred its property to the Kern River Oilfields, Limited, of California, paid its stockholders dividend No. 70, of $7 a share, amounting to $700,000.

The company is capitalized at 100,000 shares of the par value of $5 each, and has now distributed to its stockholders a total of $3,200,000. It is understood that other dividends are to follow from the proceeds of the sale of its property.

MONTHLY STATEMENT OF DIVIDENDS PAID BY ACTIVE LISTED OIL COMPANIES TO JUNE 30, 1910.

The official statement of the dividends paid by listed oil companies in California during the month of June as prepared by the California Oil and Stock Exchange, shows the amount to be $1,402,690.77

This increases the grand total of the dividends paid since the organization of the old California Stock and Oil Exchange to $32,687,593.77. The June figures include two dividends—those of the Bay City Oil Company, amounting to $25,000, and the Reed Crude Oil Company, amounting to $43,500—that were omitted from the May statement. The June official dividend report shows as follows:

Company	Dividends	Total to Date
American Petroleum	$126,735.00	$1,436,900.50
Bay City	25,000.00	135,000.00
Caribou	20,175.75	761,058.99
Claremont	10,000.00	355,000.00
Columbia	9,992.62	354,774.73
Empire	2,000.00	4,000.00
Euclid	2,000.00	213,000.00
Home	2,000.00	78,250.00
Illinois Crude	2,000.00	94,000.00
Imperial	700,000.00	3,200,000.00
Kern River	2,000.00	106,000.00
Mascot	5,000.00	25,000.00
Mexican Petroleum	85,616,70	3,734,193.64
Monte Cristo	50,000.00	540,000.00
New Pa. Petroleum	5,000.00	5,000.00
Palmer	18,020.00	304,421.05
Paraffine	3,000.00	24,000.00
Pinal	14,992.00	932,077.50
Premier	10,000.00	30,000.00
Record	7,500.00	77,500.00
Reed Crude	43,500.00	.....
Rice Ranch	3,000.00	108,000.00
Royalty	6,666.66	27,733.33
S. F. and McKittrick	15,000.00	385,000.00
Sauer Dough	4,987.50	532,226.00
Section 25	10,000.00	40,000.00
Sesnon	8,000.00	126,000.00
Union	124,813.00	6,742,694.15
United	40,375.00	2,300,086.46
Wabash	3,000.00	129,000.00
West Coast	20,816.00	235,000.00
Total to June 30, 1910	$1,402,690.77	$32,603,664.23

LATEST QUOTATIONS ON S. F. STOCK EXCHANGE.

Company.	Bid.	Asked.
Alma	1.00	.....
Amy	.....	1.50
Associated Oil Stock	45.00	46.00
Bay City	2.5.	.
Blue Moon	.20	.23
Brookshire	1.97½	. . .
California Midway	.55	.....
California Oil and Gas	.....	.90
Caribou	15.50	15.75
Claremont	1.40	.. .
Cresceus	.50	.63
De Luxe	1.65	1.70
Enos	1.37½	1.45
Empire	.	2.50
Four	.08	..
Fulton	1.35	..
Graciosa	.....	50
Gypsy	. . .	.48
Illinois Crude	.51	.55
Junction	.....	.75
Maricopa 36	.....	4.50
McKittrick	.25	
Monte Cristo	3.20	. ..
New Pa. Petroleum	1.05	1.20
Occidental	.25	
Pacific States Petroleum	.40	
Paraffine	1.00	..
Palmer	1.35	1.37½
Peerless	5.25	5.50
Premier	.92	.95
Producers'	2.50	
Radium	.25	
Republic	.45	.50
S. F. & McKittrick	.....	29.00
Sauer Dough	.	1.85
Sesnon	8.00	
Shawmut	.....	.50
Silver Tip	.2.00	2.30
S. W. & B.	.40	.43
Sterling	2.00	2.50
Traders	.	115.00
Turner	. .	1.60
Wabash	1.00	1.50
Wolverine	.30	.
W. K. Oil Co.	3.15	3.60
Yellowstone	.	.40

LOS ANGELES QUOTATIONS.

Company.	Bid.	Asked.
Amalgamated Oil	45 00	....
American Crude Oil Co.	.....	98
American Pet. Co. (pfd.)	.....	95 00
American Pet. Co. (com.)	.....	72 25
Associated Oil	45 37½	45 75
Brookshire Oil	1 90	2 10
California Midway Oil Co.	55½	56¼
Central	2 00	2 25
Cleveland Oil Co.	28	. .
Coalinga Central Oil Co.	.....	53
Columbia	.....	1 30
Continental Oil	38	55
Enos Oil Co.	1 35	. .
Euclid Oil Co.	55	75
Globe	.....	17½
Jade Oil Co.	30	40
Mexican Pet. Ltd. "Pfd."	65 00	. . .
Mexican Pet. Ltd. "Com"	23 75	24 00
New Pennsyl. Pet. Co.	.....	1 20
Olinda Land Co. (Oil)	61	64
Palmer Oil Co.	1 25	...
Perseus Oil Co.	.....	35
Pinal Oil Co.	.....	10 00
Piru Oil & L. Co.	17½	. . .
Rice Ranch Oil Co.	.....	1 00
Section Six Oil Co.	.....	50
Trader's Oil Co.	.....	110 00
Union	103 75	104 00
Union Provident Co.	101 25	104 00
West Coast Oil Co.	9 00	. .
Western Union	.....	100 00
Oleum Development Co.	07¾	08¼

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ORIGIN OF PETROLEUM—FIFTH PAPER

By PAUL W. PRUTZMAN, of the California State Mining Bureau.

Any theory which aims to account for the known deposits of petroleum and of the much larger amounts probably undiscovered, must propose, in the first place, an adequate supply of raw material from known sources.

It must show that conditions actually exist, or have existed, which would convert this raw material, or an adequate part of it into petroleum.

It must demonstrate that such conditions would actually convert such raw materials into petroleum, and not into other products, and that the conversion processes suggested have been carried out artificially, or are in accord with the laws of chemistry.. And last, if the conversions suggested leave any residues or by-products, the theory must account for the disposition of these.

The theory of mineral origin is weakest, it seems to me, in failing to show an adequate supply of raw material, though it might also be criticised as failing to show conclusively that petroleum could be actually produced by the processes suggested. The carbide of calcium, which has been suggested as a raw material, seems to be entirely out of the question, even passing any question of quantity, as it gives as sole product with reaction with water a highly unsaturated body, acetylene, rapidly converted into aromatic hydrocarbons, but not changing into paraffins, or olefins by any direct process such as could, by any possibility, take place in nature.

As to the carbide or carbides of iron—passing here the assumption that, because these bodies when acted on by acids give rise to hydrocarbons, water or steam would act on them in the same manner, which does not accord well with the known behavior of cast iron and carbon steel—we are still left without auy sufficient known supply of raw material. For carbide of iron is practically unknown in nature, and while this material MAY exist in great quantity at depth, and MAY react with water in the manner suggested, we are without any direct proof as to either point; which leaves this theory rather in the position of an ingenious and interesting suggestion, which would become plausible only on the addition of some proof as to these two points.

The theory of animal origin, while apparently somewhat lacking in proof as to the third clause, seems plausible enough if it is taken to account for the existence of a part of our oil —meaning by this, not the whole bulk of a portion of the known varieties of oil, but rather, a portion of the bulk of some, or perhaps of all known oils. It is highly probable that animal and vegetable remains are so intermingled in the strata from which petroleum originates, that no single deposit of oil can be said to be produced exclusively from either, but rather, that all varieties originate from both sources, variations in composition depending in some part on varying proportions of the two raw materials, but in greater part on variations in the conditions under which the oil originates.

The theory of vegetable origin, in the old form which deduced petroleum from the alteration of deposits of coal or lignite, fails at once in that it fails to provide any plausible disposition of the by-products. The dry distillation of coal, lignite or wood leaves a residue of carbon, of approximately two-thirds the weight, and almost the entire bulk of the original material. When distilled artificially, this carbon is soft and porous (e. g. coke and charcoal); what its appearance would be when distilled very slowly under high pressure we do not know. Very likely it would resemble anthracite in appearance, and it is quite possible that the anthracite deposits of Pennsylvania are the residues of such distillations, particularly as the oils of this district suggest by their constitution an origin from exclusively vegetable sources. But deposits of anthracite are entirely unknown in many regions in which petroleum is found in great quantity, and it is inconceivable that such residues, which in the case of the oils of California alone would represent many millions of tons, could completely disappear. If we would credit the theory of vegetable origin we must so modify it as to provide for the disposition of this indestructible residue.

This difficulty disappears if we adopt the suggestion that petroleum is produced, not from MASSES of organic matter, but from clays and sands in which minute proportions of such material have been entrained and imbedded. To give a concrete illustration.

During long geologic periods the San Joaquin and Sacramento Valleys formed a great inland sea, opening to the ocean through either the Pajaro Valley or the Golden Gate. During a portion of this time the mountain ranges of the West Side appear to have been forested, while later they became barren as we now see them.

During periods of subsidence, beds of clay and sand were formed along the coast by the erosion of the land and the washing of the eroded material into the water. While these beds were forming, the trees and shrubbery of the hills, and the grasses of the valleys were growing and dying, and their remains were being carried into the streams. What became of this vegetable debris—was it completely destroyed by decay? I think not. Some of it was undoubtedly collected in land deposits, being carried into lagoons or swamps, and thus forming the deposits of lignite which we find around the valley. But by far the larger part, rendered brittle and friable by partial decay, altered to peaty masses in swamps and again swept away by the changing courses of streams, was ground to impalpable powder by the attrition of the sands and gravels over and among which it was carried, and finally came to rest in the shallower parts of the ocean, in sedimentary beds in which it would be evenly diffused, and of which it would make but a very small proportion.

To these terrestrial accumulations would be added marine remains, both animal and vegetable—faraminiferae and seaweed—and the proportion of animal to vegetable remains in any formation would depend on the fertility of the adjacent land, the warmth of the ocean water, and the depth of water in which the strata were laid down.

These strata containing a mixture of various organic matter, being necessarily formed in areas of subsidence, would be gradually lowered into a zone of elevated temperature, and if subsidence was long enough continued (as the thickness of many deposits of many single periods would lead to believe was commonly the case) would finally reach a point at which distillation would begin, and the organic remains be converted in part into petroleum, leaving a residue of carbon diffused through the sedimentary strata.

At what minimum temperature organic matter may be distilled under such conditions as exist below the surface, I do not know. In the laboratory neither coal nor wood decompose materially under a red heat just visible in darkness, or say 950 degrees F. This temperature would produce considerable metamorphism in most rocks, and we cannot admit that actual conversion of organic matter into petroleum takes place atsuch high temperature unless we eliminate all rocks not showing some alteration by heat, which would bar the large strata visible in our local oil regions. But there is some reason to believe that, granted unlimited time, a very much lower temperature would bring about this conversion. An artificial distillation which, at a full red heat may be finished in three or four hours, will at a black heat require as many days, and while the difficulty of maintaining an even low temperature for long periods has prevented experiments along such lines, it seems reasonable to believe that a temperature not to exceed say 600 degrees F. would, in the course of a long time, suffice for the complete conversion of coal, lignite or cellulose into carbon and tar, or petroleum.

In most cases the organic matter in the strata would be entirely invisible before distillation, and probably equally so afterward. Assuming, for example, that the strata originally contained one half of one per cent of organic matter. After distillation the residue would amount roughly to one fourth of one per cent of the shale or sandstone. In any but the whitest shale this amount of carbon would, even if itself black in color, be but a grayish stain, while if the carbon produced under such conditions were brown, which is more than likely, the stain would be brownish or yellowish, amounting to no more coloration than would be produced by a trace of iron or manganese. Shales containing upward of six per cent of carbon, which I have examined, were far from black, rather of a dull grayish color, but I think it is safe to say that most of the gray, brown and black shales found in the oil country have sufficient depth of color to conceal up to one per cent of free carbon.

Nor could the presence of such small amounts of free carbon be determined by analysis, in any way of which I know. Carbon has no chemical tests, but is determined solely by combustion into carbon dioxide gas. To distinguish between carbon as such and the trace of carbonates existing in all shales, would require very delicate manipulation, and would probably be quite impossible where fractions of a per cent were concerned.

However, we know that shales exist containing larger amounts of carbon, that many samples of sand contain visible amounts of coal or lignite in granular form, and that many shales are found containing various percentages of lignitic material, not in masses but integral with the shale. Further, that almost all surface soils contain a notable amount of wax and resin, which while no definite proof that such materials exist in marine sedimentary strata, helps us to judge as to the inherent probability of such organic content.

Now let us see whether we have provided a sufficient supply of raw material. Using the same figure, one half of one per cent, which would be roughly equivalent to one- eighth of one per cent of liquid distillation products, we calculate: one cubic foot of average dry shale will weigh say 100 pounds. One-eighth of one per cent distillate would be 0.12 pounds distillate from each cubic foot. One square mile of a stratum one foot thick would contain 27,457,600 cubic feet, which at the rate of 0.12 pounds per cubic foot would yield 3,294,912 pounds distillate; or about 10,000 barrels of liquid distillate from each square mile for each foot in thickness.

And as these sedimentary strata are measured, not in feet, but in thousands of feet in thickness, and not in miles but in hundreds on hundreds of miles in extent, it will be apparent that we can figure on a percentage of organic matter very much smaller than the above, and still account for all the deposits of petroleum of which we know or can remotely guess.

Let us now see whether suitable conditions exist beneath the Earth's surface for distilling petroleum from organic matter, assuming for the present that petroleum may be actually produced by such distillation. The conditions necessary are:

That the organic-bearing strata should be, at some time, heated to the decomposing temperature, or not less than 600 F. That after decomposition of the organic matter, the liquid product should be removed from the further influence of high heat.And, to produce deposits of commercial importance, it is necessary that the small amounts of petroleum which would be produced at any one time and point should be collected and stored in suitable reservoirs.

While opinions differ as to the temperature of the interior of the earth, no one will contend that it is not much higher than at the surface. I do not believe that the statement will be questioned, that a temperature of 600 degrees F, would be reached on penetrating to a very modest depth.

As sedimentary strata accumulate in thickness, it follows that the base of any series is sinking into a zone of high temperature, as it is perfectly apparent that, were the base not subsiding, the stratum could not increase in thickness, as it would soon reach the surface of the sea. How great the thickness of any given formation must bebefore its base would pass into a decomposing temperature would depend on local conditions, but considering the constant succession of elevation and subsidence, and the crumpling and overturning to which the earth is subjected along mountain ranges, it is probable that the major part of all but the very latest sediments in such regions have, at one time or another, been subjected to a temperature above 600 degrees F.

As a stratum containing organic matter sank into the zone of heat, the temperature of its lower portions would be very gradually raised, probably, at any one point, only by a fraction of a degree per year. Where the subsidence is long enough continued, the decomposing temperature would finally

be reached. And as each fractional degree of temperature would be practically constant for a very long time, decomposition would take place under conditions the most favorable to the formation of open chain (petroleum) rather than closed chain (coal-tar) hydrocarbons—that is, it would take place at the absolute minimum of temperature.

As liquid products were formed they would be driven upward, as they would be in a vaporized condition when formed, and vapors always seek to pass to any point where they may be condensed. No rock, however dense, would restrain this tendency of the vapors to seek the cooler strata, and thus the petroleum as formed would automatically and certainly remove itself from the danger of further decomposition. And indeed, should the fracturing and subsidence of rocks already saturated with petroleum tend to carry the oil into a heated zone, its ability to distil before decomposing would protect it from further change—in other words, it would be impossible for earth movements to carry oil already formed into a zone of high temperature, as it would always be distilled away into cooler rocks before it would decompose.

As the stratum sank farther and farther into the zone of heat, the oil in gradually increasing quantities would be forced higher and higher in the stratum. Or rather, if we consider the depth at which decomposition of raw material would take place to be practically constant during one geologic period, the subsiding strata would sink past this level, leaving the petroleum to accumulate at a higher and also constant level, and this accumulation would continue so long as the subsidence was maintained.

When the subsiding period came to an end, and elevation started, the petroleum formed would be carried upward, the ability of liquid petroleum to penetrate rocks saturated with water being much less than that of the vapors. During these periods of elevation the portions of oil thinly scattered through the rocks would be forced from point to point by water currents, would drain into the cracks and fissures formed by crumpling, and to a certain extent would be moved by local heating, due to chemical action, which would drive out the petroleum from the heated portions. By these means much of the oil would be brought to the surface in minute, and generally invisible quantities, and thus dissipated and lost. Another part would remain diffused through large masses of rocks, and perhaps only the smallest part would be brought into favorably situated sand beds, so shaped and surrounded by impervious materials that the oil could enter them from below and rising against a dense capping, be protected from removal by the water circulating below.

In my opinion, it is to the rare presence of favorable reservoir conditions that our commercially valuable oil fields are due, rather than to the absence of petroleum at other points, as it seems likely that petroleum is present at some depth in almost all sedimentary formations lying along lines of movement, but in some cases not yet collected into deposits by the slow action of water movements and drainage, in others buried at a great depth of subsidence, again lost for our purpose by excessive fissuring and leakage, and only occasionally concentrated in beds thick enough and rich enough to justify drilling. I am firmly of the opinion that of all the petroleum which has been produced since sedimentation began, only a small proportion is now in existence as such, and of this portion but a minute fraction is collected in our oil fields.

NEW FREIGHT SCHEDULE.

It is reported that a new schedule of freight rates into the oilfields will shortly go into effect, a letter from the secretary of the railroad commission to the Kern County Board of Trade indicating a general reduction from Bakersfield to all West Side points on all materials.

PRODUCTION FOR JUNE, 1910, IN DETAIL.

Following is the production of the various oilfields of the State for June, by districts. It is noteworthy that the production fell off considerably during the month, May's output being a half million barrels greater than that for June. These figures are approximate only and subject to revision:

San Joaquin Valley Fields.

Coalinga	1,419,336
Kern River	1,260,000
Midway	600,000
Maricopa	1,340,000
McKittrick	525,000
Total	5,144,336

Southern Fields.

Salt Lake-Sherman	265,000
Los Angeles City	37,000
Ventura County	38,500
Newhall	12,500
Fullerton, Brea Canyon and Puente	410,000
Whittier-Coyote	106,000
Total	869,000

Coast Fields.

Santa Maria, Lompoc and Cat Canyon	610,000
Arroyo Grande	500
Watsonville	1,000
Summerland	5,800
Total	617,300
Total production for State	6,630,636

Production, all fields in State, May, 7,172,313 barrels; June, 6,630,636 barrels. Shortage in June, 541,677 barrels. Daily average, May, 231,365; June, 221,021. Production, San Joaquin Valley fields, May, 5,576,679; June, 5,144,336; Shortage, 432,343.

NEW WELLS FOR JUNE.

Following is the California Derrick's list (by districts) of new wells brought in during June, 1910; subject to correction: Kern River, 42; McKittrick, 8; Midway, 13; Coalinga, 18; Sunset, 11; Santa Maria,2; Salt Lake, 5; Whittier-Coyote, 3; Fullerton, 1; Santa Paula, 1; Newhall, 1. Total, 105.

COAST SHIPMENTS OF THE UNION AND AGENCY COMPANIES, FOR JUNE 1910.

The Producers Transportation Company shipped from the port at San Luis, during the past month, 70,000 barrels.

The Union Oil Company shipped from the port at San Luis, 385,000 barrels; from San Pedro, 90,000 barrels; from Ventura county fields, it shipped a total of 14,000 barrels, making a grand total of 489,000 barrels.

RECENT WELLS.

Following are some of the more recent wells which have been brought in lately, with such additional information as seemed would be of interest to the reader:

Midway.

Midway Northern.—Well No. 1, on the northwest quarter of section 32, 12-23, Maricopa, when last reported was flowing by heads at rate of from 400 to 500 barrels per day. A 30,000 barrel sump is being constructed by the company to hold the production, and two 1,000 barrel receiving tanks are also under construction. Gravity is 19.3 degrees Beaume, by Standard test. It is said that upon the sale of the production of well No. 1, the company will proceed to drill well No. 2.

Brad Oil Company.—Well No. 1, brought in at 1900 feet on section 15, 32-23, Midway, a good well and thought capable of a fairly large production. Company is owned largely by Canadian capital, W. E. Burns of Vancouver, B. C., being president. The Canadian Pacific Oil Co., of Los Angeles, also owns a considerable portion of the stock.

American Oilfields.—Well No. 56, 1806 feet deep; gusher. Well No. 79 of the same company mentioned especially in another column.

Santa Fe Railroad Co.—On section 30, Midway, gusher mentioned in another column.

Sunset Monarch.—Section 26, 12-24, 2270 feet deep. Special mention in another column. Gusher.

Consolidated Midway.—Section 30, 12-23, Midway. Gusher. Special column.

Dominion Oil Co.—Well No. 1, section 15, 31-22, N. Midway Doing about 200 barrels; on pump when last reported.

Fortuna Oil Co.—Second well, first having been unfortunate; same section as Dominion. Completed at 550 feet; production unstated.

Kern Wells.

Jewell Oil Co.—Section 25, 27-28; averages well with Kern producers.

Kern American.—Section 6, 29-28; averages with district. On pump.

Traffic Oil Co.—Wells Nos. 9 and 10, section 36, 28-27. On pump.

Kramer Consolidated.—On Kern, San Bernardino county line; well No. 1, paraffine base oil found in the State of California. Obtained at depth of 2900 feet. Quantity unstated, but thought to be small.

Coalinga.

Good Luck Oil Co.—Well No. 5, on the beam, producing steadily.

California Oilfields, Ltd.—Well No. 16, on the beam. Reports meager.

Coalinga National.—On section 8, 20-15, mentioned in our last issue, well No. 1, declared to be good for at least 500 barrels of light, clean oil per day.

Santa Maria.

Los Alamos Petroleum Co.—Well No. 1, doing 150 barrels of good oil daily, on pump.

AGENCY PLANS FOR LOANS ON OIL NOT COMPLETED.

The matter of securing loans on stored oil is still being worked upon by the members of the Independent Agencies, although it is said that nothing definite has yet been decided upon. The Agency price for oil during June was $.42968 per barrel; for July, slightly more than $.43 per barrel. Some 52% of the total production of the Independents was disposed of, not counting the output of the Lakeview.

NEW AGENCY PLANNED.

A movement is under way for the organization of a second Producers Agency among the various Coast field producers. The plan is to form the new concern on the same general pattern which has been so successful in the San Joaquin Valley Agency.

PRODUCERS TRANSPORTATION CO. STORAGE NOTES.

The Producers Transportation Company is building two enormous concrete reservoirs, 600 feet across at their base, for storing their oil on the Coast. The company has also recently completed three new 55,000-barrel storage tanks at Coalinga.

JULY DIVIDENDS OVER ONE AND ONE HALF MILLION DOLLARS.

The following is the official list of dividends declared for July by companies listed on the San Francisco Stock Exchange:

Company	Per Share	Total Dividend
Alma	$ 03	$ 11,400 00
Amalgamated	1 00	50,000 00
American Petroleum Co.	1 00	126,735 00
Caribou	25	20,175 75
Claremont	02	10,000 00
Columbia	00½	9,992 62
Del Rey	00½	3,925 50
Empire	01	2,000 00
Euclid	01	3,500 00
Home	02	2,000 00
Homestake	10	1,000 00
Illinois Crude	01	2,000 00
Imperial	8 00	800,000 00
Kern River	10	2,000 00
Mascot	10	5,000 00
Mexican Petroleum Co.	01½	57,692 76
Monte Cristo	10	50,000 00
New Pennsylvania Petroleum	01	5,000 00
Palmer	01	18,020 05
Pinal	10	14,992 00
United	50	40,376 50
Premier	01	10,000 00
Record	07½	7,500 00
S. F. and McKittrick	30	15,000 00
Sauer Dough	02½	4,987 50
Section 25	25	10,000 00
Sesnon	06	6,000 00
Superior	01	5,000 00
Union	50	124,813 00
Wabash	20	60,000 00
Total for July		$1,509,041 68

This amount was later swelled to $1,527,641.27 by payments made too late to be included in the official list. The whole raises the total dividends to date to $33,607,165.11.

MASCOT OIL COMPANY WILL DOUBLE DIVIDEND.

It is given out that the Mascot Oil Company, one of the most reliable low capitalization companies producing in Midway, will probably double its one per cent dividend in another month. The output of the Mascot is more than 2,000 barrels daily, contracted for at 50 cents per barrel. The two per cent dividend would disburse $10,000 per month. The Mascot is one of Col. Timothy Spellacy's companies. Its capitalization is 380,000 shares, which is considered low for the production and dividend-paying capacity of the company.

STATE MINING BUREAU'S PRODUCTION AND VALUATION REPORT FOR YEAR 1909.

The total value of petroleum produced in California during the year 1909, as shown by the excellent compilation of the California State Mining Bureau, just issued, is $32,398,187, the total production being given as 58,191,723 barrels. The value of asphalt, bituminous rock and natural gas is placed at $2,440,537, bringing the grand total for hydrocarbons and gas to $34,838,714, a considerable advance over the preceding year.

The total daily production of petroleum in the United States is placed at approximately 600,000 barrels. Of this, California produces slightly in excess of one-third the entire amount.

LAND SALES OF RECENT DATE

The Barry Hamilton lease has been sold to W. E. Schultz and associates of Maricopa. Lease consists of N. W. ¼ of S. W. ¼ of section 22, 32-24, Maricopa. List of purchasers is as follows: W. E. Schultz, Dr. Bass, T. M. Gardner, Captain Weed and E. L. Weed.

The Merchants and Bankers Oil Co. has purchased the twenty acres comprising the N. ½ of the N. E. ¼ of section 16, 28-28, Kern River. Price unstated; section entirely undeveloped.

The Canadian Pacific Oil Co. has taken over the Warner 40 acres adjoining its property at Whittier, Cal. The land is understood to be valued at about $60,000.

The Caribou Oil Co. has purchased the 80 acres comprising the E. ½ of the S. E. ¼ of section 28, 31-23, Midway. Price unstated.

The Adeline and Adeline Extension Oil Companies at Maricopa have been sold to New York and Providence, R. I., people. Price stated as approximately, $500,000. This property is famous for its superior production of road and fuel oil, which brings 75 cents per barrel, delivered on cars. Messrs. Barlow and Hill of map book fame have been in charge until the present.

The Buckeye Oil Co., through U. S. Waugh, has purchased the holdings of the Enterprise Oil Co. on the E. side of section 22, 28-28, Kern River.

The Clampitt holdings, recently purchased by the London Petroleum Co. of which N. F. Wilson, President of the Lincoln Mortgage and Loan Company, of San Francisco, is President, have been transferred to the Ventura Oil and Development Company, located close to Piru, Ventura county, Cal.

NEGOTIATIONS REPORTED FOR SALE OF CALIFORNIA MIDWAY.

Negotiations are reported to be in progress for the purchase of the California Midway property. It is being sought by two well financed syndicates. It is said the sale, if consummated, will be for 60 per cent or more of the stock, and the price to be not less than $1.50 a share. The prospective purchasers are English in a large part, if not entirely. On the basis of $1.50 a share the total price will not be less than $900,000, the capital being $1,000,000 at par. If more than 60 per cent of the stock is purchased the total amount will be a million or over.

OIL LAND TRANSFER.

Frank B. Chapin, the New York Promoter who organized the Mays Oil Company and several other well known companies operating in the Midway district, has transferred to Richmond Weed, the 160 acres comprising the south half of of the northwest quarter and the north half of the northeast quarter of section 28, 31-32. The consideration has not been made public.—Bakersfield Oil Journal.

ADELINE TO BUY OVERLAND'S KERN PROPERTY.

It is reported that negotiations are under way for the sale of the Adeline Oil Company's property at Maricopa to the Overland Oil Company. It is believed that the negotiations are about completed. The Overland is largely owned by New York parties and is operating in the Kern River field.

THE COIN WELL LARGE.

The Coin Oil Company's well on section 4, 21-22, Midway, is a large one. Gas pressure encountered is very heavy.

MORE BRITISH CAPITAL INVESTED.

A sale of properties presumably in the San Joaquin Valley, the consideration for which is said to approximate the sum of $3,000,000 is reported upon creditable authority to have been made by D. S. MacInnes, formerly of San Francisco and New York, now manager of the London branch of the large brokerage and holding institution, the Lincoln Mortgage and Loan Company, of San Francisco. MacInnes is reported to have said that there is a very great deal of interest taken in California Oil Investments in Great Britain, the English being as a rule in favor of leasing or buying outright the best producing properties obtainable. In regard to the investment idea in Great Britain at the present time, and the more important point of oil for the British Navy, MacInnes is quoted by the San Francisco Post as saying the following:

"There is no question but that many millions of dollars will come to California within the coming months, as interest is growing rapidly among conservative investors who are looking for profitable propositions. Naturally the large syndicates are not, as a rule, investing in stocks, except where controlling interests can be delivered, but the general public is becoming awakened and are getting into substantial investment stocks.

Government Wants Lands.

"One of the causes of the awakening to opportunity is the fact that the British Navy is using our oil as fuel for its ships in connection with coal, and the Government has already taken a long step toward equipping the entire Navy, having lately contracted for a considerable amount of oil to be used in the new vessels being constructed. As soon as the British Navy begins to use oil generally other Governments will forced to follow suit.

There is a possibility, however, of the Government securing large holdings in California oil fields, so that it will be independent of outsiders. It will then depend entirely upon its own supply of oil. It may build pipe lines to the coast so as to be entirely independent in every direction. Of course, the business will not be done in the name of the Government. As California people already are aware, the holdings of English syndicates and companies are already extensive, forming a nucleus for enormous acquisitions."

In regard to this latter: We hope that before the British Government, through its agents, can secure enough producing property to largely supply their war vessels with fuel, that the blindness of our Government will not allow us to be entirely without a governmental supply for our own navy. But at the present rate of awakening, it is doubtful whether there will be a great deal of oil-bearing lands, other than these recently withdrawn, left for our vigilant officials to purchase, unless the Government sees fit to exercise its prerogatives in releasing the S. P. from the land granted it "other than mineral bearing," not including coal or iron.

JADE LEASES TWENTY ACRES.

J. E. Davies and associates of Los Angeles have leased the southeast quarter of the northeast quarter and the east half of the southwest quarter of the northeast quarter of 15-32-23, Midway, from the Jade Oil Company on one-fourth royalty. This is on the east line next to the Union Oil Company's big well on 14, and east of the Consolidated Midway. The Jade has 240 acres in fee, bought two years ago for cash, and eighty acres leased on a one-tenth royalty, all in section 15.

SOUTHERN PACIFIC CONTRACTS FOR OKLAHOMA OIL.

The Southern Pacific Company has contracted for 9000 barrels of crude oil per day from Oklahoma for the use of its engines in Texas and Louisiana. A pipe line 350 miles to the Mexican Gulf is being planned.

CALIFORNIA DERRICK

The Oil Authority of the Pacific Coast.

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SOME PERTINENT QUESTIONS.

A famous member of the Bar having recently visited San Francisco, it was thought that he could shed light on some important questions of the day; these were propounded to him by the Editor of this magazine and the following answers to the questions asked, were obtained:

Question. What is a Secretary of the Interior?

Answer. A Presidential Appointee whose duties are not fixed.

Question. Why is a Secretary of the Interior?

Answer. To muddle the affairs of State and befool the people.

Question What is the object of this befuddlement?

Answer. To serve the Interests.

Question. Who are the Interests? Why and What are they?

Answer. Nobody knows; they are strongly suspected of being the Government.

Question. Is a Secretary of the Interior a necessity?

Answer. Absolutely; were there no one to muddle affairs while laws were being passed to justify the muddling, the President would be in a very uncomfortable position as it would jeopardise his chances for re-election should he take it upon himself to perform the very unpopular duties of the Secretary.

Here the famous attorney declined to be further questioned and, upon being pressed, walked rapidly away, saying nothing.

Some questions have been asked us as to why the Government, when in its present conservative mood, does not recall the patent which was given the S. P. for the lands which, (excepting the minerals, coal and iron) were allowed the big corporation with the distinct understanding that they should not have "mineral bearing" properties. If these lands are known to be petroleum bearing by the Government (and the Government's own agents have made innumerable reports on them), why does the Government not conserve its properties which the Southern Pacific holds? That is the question. Some say that the Government will take the lands back after the petroleum has been drained from them. Others say that they will try to take them back in the near future; but that the railroad, being in possession, will make such a fight as to prevent this, is undoubted, especially under the present administration. Again it is said that the S. P., if hard pressed for legal reasons for its possessions, will claim that the Government had no right to make any stipulations when giving away its own land.; and on the other hand it is argued that the S. P. will make a plea for remuneration for maintaining the property for the Government all this time, and, if the Government hasn't the money to pay, will have to accept the lands for their custody. This would be an act of philanthropy, as it would save the people the trouble of listening forever to the excuses which prominent politicians would have to make for passing a law confirming the grant, etc.

That marvelous institution for wool-gathering, or sheep-shearing, the New York Stock Exchange, will receive a sore set-back, perhaps, from the actions of Burr Bros. It is acknowledged that the promotions at the time of the Nevada Comstock wouldn't have a show in a race with Burr Bros. of New York. "Coalinga Aladdin" was a fine name for their company; Coalinga gave the location and Aladdin did the rest. We wonder why Burr Bros. were not tracked by the sleuths of state.

J. M. ELWOOD, DISCOVERER OF KERN RIVER, DEAD.

J. M. Elwood, the discoverer of Kern River met his death on the 5th inst., as the result of being crushed under an oil tank containing fifteen barrels of crude oil. Every bone in Mr. Elwood's body was broken or crushed, including his skull. While everything was done after he had been drawn from beneath the heavy tank, to aid him, he was beyond all human assistance; and when the automobile in which he was being carried to a hospital neared its destination, it was found that he had passed away. Never once, from the time when the accident occurred, (and it was so sudden that he is said to have had no time to cry out), did Mr. Elwood regain conciousness. Mr. Elwood's loss is one of those bereavements which are only felt in their full intensity after the passage of time. The Coalinga Daily Record, in commenting on Mr. Elwood's demise, had the following to say:

"J. M. Elwood was one of the pioneers of the San Joaquin oilfields, having first launched in the oil diggings in the Kern River field in 1899, when, with a pick and shovel, he began prospecting for the fluid and sank a shaft some sixty feet deep, finding a small flow, and later secured a second-hand rig and found the real sand. Since that time he has constantly followed the business. Some time ago he sold his holdings in the Kern River field to the Santa Fe and connected himself with Messrs. Cartwright, Lonkey and others in developing the Coalinga Lakeview, in the Kettleman Hills."

The story of the drilling of Discovery well by Mr. Elwood and "Tom" Means, proving the Kern River field, is History. It assures Mr. Elwood's memory as no monument ever could.

THE CHEMISTS AND THE PRIZE FIGHT.

(An Editorial for Little People.)

Once there were some chemists, who had done a great deal for the world, by perfecting machines which would do wonderful things. These men were very noted and once thought that they would take a trip to the Pacific Coast and see the oilfields. There were to be a thousand of them but only about a hundred of them wished to see the wonderful oilfields. But when some people asked for a little money to help show these great, useful men who had done so much for humanity, what California's oilfields looked like, then there was no money to be had. Everyone had left the State for the summer and all money had stopped flowing in from the wells, so the chemists could'nt come.

At the same time that the chemists were visiting California, two prize-fighters were going to perform. Their performance is a very edifying spectacle and one which all should witness. It consists of two men standing on a square floor, each trying to pound the other into jelly, so that they will look like beautiful jelly-bowls. Everybody loves to see beautiful jelly-bowls. So when there was a chance to see a big black prize-fighter make jelly out of a big white one, everybody found some money somewhere, made the oil come right out of the ground to get the money, came back from their vacations, and went to see the prize fight. Is'nt it lovely, little people, to think that they all saw the fight, and did'nt have to give any of their hard-earned money to a lot of chemists, who did'nt fight at all? We think so, little children, don't you? The chemists should have been prize-fighters, shouldn't they? Then there would have been lots and lots of money for them to see the oilfields.

ATTENDS CHEMIST'S MEETING.

D. Basil W. Alexander, head chemist for the Barber Asphalt Paving Co., with offices in Los Angeles, attended the meeting of the American Chemical Society held in San Francisco, last month, at which a number of very notable papers were read. Mr. Alexander will probably write some very good matter exclusively for the California Derrick, in our next issue. The subject will probably discuss various grades of asphalts, what is done to fit them for use, and all about them. We hope our subscribers will look for these papers as they will be of very general value to oil and asphalt men.

MISNOMER.

A great deal of trouble has been caused, from time to time, by the peculiar meaning which the misuse of the word "wildcat" has caused that word to take. There is really no reason for calling drilling in likely oil places, which are as yet not definitely proven oil lands, by the opprobrious epithet, "wildcatting," yet that is what such drilling is, and that is what it will always be, in all probability.

To the oil man it conveys no peculiar significance of a leaning toward shady dealings on the part of a certain company to say that that company is wildcatting a certain tract of land. To the uninitiated, it damns the project. There is no reason why this should be so, but it seems to be a fact that it IS so. The Union Oil Company, the most powerful in California, has undoubtedly been, if it is not at the present time the greatest wildcatting concern in the world. The way the Union "wildcatted" in Santa Maria and Ventura is known to oil men from one end of the country to the other; and yet, if a small concern dares to drill in an out of the way and unexplored place, it must, forsooth, become at once the crazy project of prospectors, or the pit digged for the unwary to fall into. Evidently there is something wrong with the application of the word "wildcat."

The Standard Oil Company was for a time, if indeed, it is not in the lead still, the foremost wildcatter in the Midway and Sunset districts. The Associated has been a big wildcatter; in fact, there isn't a company in the State today which is not drilling on ground once classed as rankly wildcat—the whole State was wildcat territory. For this reason it would seem that another name should be assigned to the precarious work of prospecting new oil lands with the drill. "Wildcatting" places a heavy handicap upon the new company trying to get enough funds to carry out a project which may prove to be one of the great bonanzas, in the course of time, which the oil-producing regions can show.

LARGE SALES MADE TO NEW YORKERS.

John Merrill of New York and associates have taken an option on three properties of the Western Engineering Company of Los Angeles. They are the North American Petroleum Company, owning 100 acres in section 34, 31-23; 1200 acres in the Kramer district, in San Bernardino county, and 1120 acres in the Cuyama valley, San Luis Obispo county; the Canadian-American, with 60 acres in 34, 31-23; 1280 in Kramer, and 960 in the Cuyama valley, and the Midway Southern, with 100 acres in 20 and 21, 11-23.

NEW YORK CAPITAL MAY FINANCE COMPANY IN VALLECITOS DISTRICT.

The San Francisco Chronicle says: The Vallecitos country lying east of Hollister is beginning to attract unusual attention. It is reported that Ralph Arnold is planning to start there for a New York combination. Quite a number of oil men have been looking at the country of late.

LONDON PETROLEUM OPERATIONS.

Advices from Kern River say the London Petroleum Company has commenced operations, the successful conclusion of which will extend this field more than a mile to the north. The company has spudded in its first well on the west side of section 8-28-28. The London Petroleum Company is a promotion of the Lincoln Mortgage and Loan Company and U. S. Waugh. It is capitalized for $200,000 and is developing the land for an interest.

WILL DRILL IN VALLEJO FOR LIGHT OIL.

The Triangle Oil Company, a new Vallejo incorporation, is about to try its luck in the search for the volatile liquid said to underlie all the region thereabout. While there has been nothing done in the way of drilling in Vallejo or vicinity for as long as about nine years, when an oil company put down a hole for a distance of 800 feet, the community has lately come to the conclusion that oil can be obtained, and, under the guidance of President R. Wilcox of the newly formed Triangle Oil Company, a deep test, (if necessity compels it the hole will be put down 3,000 feet) is to be made, operations to begin immediately.

One of the staff of the California Derrick accompanied President Wilcox, formerly of Coalinga, to the site of his prospecting, and was shown what he regards as sure signs of oil in quantities. A gas well which is in constant operation was one of these signs. The gas issues from the water in large bubbles which, if touched with a match, explode with a blue flare. This well is some distance from the site which is to be drilled, a ranch about one and a half miles from Vallejo, on which shale was picked up which bore unmistakable signs of being petroleum bearing. This shale was taken to Mr. Hugh Price, a mining engineer of San Francisco, was found to be impregnated with oil and is one of the reasons for the formation of the Triangle Oil Company. Mr. Wilcox is of the opinion that a certain outcrop of blue shale which lies to the west of his property, dips at an angle of about 45 degrees so that he hopes to penetrate it and go into the oil sands under the basin in which the Triangle well is drilling, at a depth of from 1500 to 2000 feet. The entire region around Vallejo and Napa Valley generally is known to be more or less impregnated with gas. Few if any real good oil discoveries have been made; that is, good in comparison with the big fields of the lower end of the State. Gas is found in quantities. But the petroleum indications are good. It is said that the Standard Oil Company has actually bonded all the territory lying south of the Napa County Line as far as Benicia; in all, approximately ten thousand acres, covering the region which the Triangle is located in the center of, and from which the Triangle expects a large well. The truth of this bonding matter has not been ascertained. The operations are being generally watched with interest, as it is always possible that a new, unexpected source of petroleum wealth may be opened up by the drill of the prospector.

COMPLETES KERN WELL.

The Consolidated Midway Oil Company, operating on section 21, 21-28, Kern River district, recently completed well No. 4, and it is estimated to be a 60-barrel producer. The derrick is up for well No. 5 and material on the ground for well No. 6. The company intends to drill forty wells.

DRILLING IN SAN ANTONIO HILLS DISTRICT.

The West Monterey Oil Company is drilling in the San Antonio Hills in Fresno County, with what are considered good chances for success.

SANTA MARIA

The Refiners and Producers Oil Company, operating on the Graciosa lease, is down 3200 feet with its 6-inch casing in No. 19 well. This is the longest string of 6-inch in the Santa Maria field, and the report shows brown shale formation with a good showing of oil. This company has had considerable difficulty in putting down the casing in well No. 20, and is now adjusting it. Owing to the depth of the hole it is not improbable that some time will be spent in getting the casing in working order, but a production seems to be assured, as the present sand is more than forty feet thick.

The Okell Core Drilling Company, that some time since drilled near Bairdstown between Los Angeles and Pasadena to slight depths to demonstrate the working of its drill, has undertaken to sink a well for parties who have leased a tract in Tapo Canyon near Santa Maria, from the Camullus Oil and Development Company. A large and very heavy rig has been put up, it is supposed with the intention of going to considerable depth.

The Coblentz Oil Company, adjoining the New Pennsylvania in the main Santa Maria field and directly east of it, is drilling and at the present time is about 2840 feet deep with 8-inch casing, the hole in a first-class condition.

The Brookshire Company's property in the Santa Maria field is in fine shape. From two wells they obtain over 20,000 barrels of oil per month. The company is deepening several of its wells in an effort to enlarge the production, and has met with success all along the line.

The Henderson Oil Company, drilling on the Blodgett tract, adjoining the New Pennsylvania in Cat Canyon, Santa Maria district, is down 3010 feet with six-inch casing. The tools are in gray shale at present after having just passed through the eleventh stratum of oil sand.

The Palmer Annex Oil Company on the old Mission tract, only a few hundred feet north of the Palmer Blochman lease, is installing a standard and rotary combination on its first well. Mr. Kellerman, who is in charge on this lease, has taken the initiative in putting in this combination, as nothing like it has been used in that field before. The general opinion is that it will be a success. Much interest is manifested among the oil critics.

The Ora Light and Power Company, operating on section 28 in upper Cat Canon, Santa Maria field, is surveying preparatory to beginning operations under the management of H. S. Bainbridge, formerly of the Union Oil Company. In view of the fact that the Carpenteria Oil Company has struck a tar sand showing at a shallow depth, this territory looks very promising for oil. E. W. Clark of San Luis Obispo is the president of the Ora Light and Power Company, and the officers will be centered in that city.

The North Star Oil Company, drilling in the Edna field, north of Santa Maria, has passed the 3100 foot mark. It is said that by stopping at a depth of 2700 feet a production of 50 barrels per day of a light oil was assured the company.

The Henderson Oil Company's well on the Blodgett Tract, adjoining the New Pennsylvania in Cat Canyon is about to be finished at a depth of 3300 feet.

The Refining and Producing Oil Company's well No. 19 on the Graciosa Lease is close to a mile in depth and will soon be finished, according to a current report in Santa Maria.

Union's well No. 3 will be finished at 3300 feet shortly.

Western Union's well No. 33 has come in a good producer.

The Palmer's two gushers continue to be the great feature of the field. No. 1 is still producing at the rate of 1600 barrels per day. No. 2 is flowing phenomenally, its output having increased to 8150 barrels per day. Its production is the best kind of refining oil.

The Tiber Oil Co., operating in Price Canyon, San Luis Obispo County, is reported to have been sold recently; home capital has taken the Tiber. Price paid, unreported. Property has seven wells all of which produced. Grade of oil was about 11½ gravity. Wells were shut down recently as the company had more productive possessions in the San Joaquin Valley. It is understood that the Tiber will once again become a producer and that when it resumes business it will dispose of its production to the asphalt refining company near Edna, which is said to be desirous of obtaining their product.

ASSOCIATED ISSUES ANNUAL REPORT.

Savors of High Finance and is Generally Considered as Being Misleading to Shareholders.

The annual report of the Associated Oil Company, which has just been issued, shows that the company owns 20,885 acres of land, and owns a controlling interest in 4,500 acres held by subsidiary and other concerns. Of the total however, on examination, it is seen that it is not by any means all oil land; 5,197 acres are credited to the Coalinga field, when as a matter of fact, but one section—36-20-14—is in the proven belt, the balance being located out on the edges and the "front;" 8,317 acres are located in San Luis Obispo county. This county produces no oil, and never has, except in the Tiber pool which is less than 100 barrels a day. This land is entirely prospective so far as oil is concerned. They also give 1,080 acres as located in Kings county. This county produces no oil, and these lands are also in the wildcat class. The best oil land among the present assets of the company are those which it acquired when it began business and are located in the Kern River and McKittrick fields. The general opinion is that the company does not make a very creditable showing in its statement, especially as compared with the Union Oil Company which owns and controls about 300,000 acres of land, distributed in every field of the State, much of it in the heart of the different fields. The production of the Associated is about 15,000 barrels a day, and that of the Union about 45,000 barrels a day. Both have their own pipe lines and oil carrying vessels and are strong competitors for business. Although the Associated has a large number of producing companies under contract to supply it with oil, the Union has the advantage of being the marketing agent for the Independent organization and in this way controls a much larger output. The largest consumer supplied by the Associated is the Southern Pacific Railway, while the Union supplies all classes of consumers from the sugar refineries in the Hawaiian Islands, to the Government shops and dredgers on the Panama Canal Zone, and in the lumber mills in Washington and Oregon. The more conservative stockholders of the Associated are reported as looking upon the statement issued as in the nature of a stock-selling scheme. The great association which goes under the name of the Associated Oil Company has suffered severely in the public confidence since the Southern Pacific Railroad got its clutches upon it; instead of being in possession of several hundred thousand acres of good, proven oil lands, almost three-fourths of the company's possessions consists of about fifteen thousand acres of purely prospective, and in a large measure, non-prospective territory. The stock end of Associated is being run, a-la-High Finance.

MIDWAY NORTHERN LAYS PIPE.

A pipe line is being laid from the Midway Northern on the northwest quarter of section 32, 12-23, to the New Center, and this company will market the production for the time being. The New Center has contracts with three railroads and one refinery. As the Midway Northern oil is of 22 gravity, it will probably go to the refinery.

THE OILS OF VENTURA COUNTY

(Continued)

By HENRY J. JORY, Civil and Mining Engineer

The Accompanying Snapshot Shows Mr. Jory, Author of The Fascinating Series of Papers on Ventura County, of Which the Following is The Second

Historical.

The knowledge of petroleum within this region dates back at least as far as the establishment of the original Mission, San Buena-Ventura, in 1786. Within the oldest of these mission records we find mention of the distillation of small quantities of light, inflammable oils from the various great seepages of the county, by the Spanish Padres. Without a doubt, some of this was used at times to light the original cathedral of the Jesuits. As far back as 1850, a small and crude refinery was operated, using this natural product at the mouth of Ojai Canyon. These first attempts at refining were, however, made upon the heavy black oils now in evidence at the surface, and the percentage of lighter products was necessarily very small. The first real history of the county as an oil producer began some 30 years ago, with the advent of Messrs. Hardison, Irwin and Stewart, experienced oil men from Pennsylvania, who were attracted to this almost unknown region by the reports of vast surface indications. A reconnaissance made by these founders of the now famous Union Oil Company of California, resulted in the discovery of such an abundance of surface petroleum products as had never before been known in the history of the world. No Canyon was without its oil springs and seepage zones—and every flat carried its brea beds and asphaltum deposits. The word "brea" being Spanish for "tar," was locally applied to the large deposits of soil and surface earth saturated with black oil and asphalt. The word has since found application all over Southern California, and is now an important term in the nomenclature of the oil regions.

The Origin of the Oil.

The sources of Ventura Petroleum, viewed in the light of modern experience, seem very simple. It was early noted that the deposits occurred in isolated patches along certain lines or belts, and that these belts were very continuous throughout the county. It then began to be evident that the oil was confined to but two or three different rock formations, now well known and segregated. Wherever these particular oil-bearing formations were cut by existing Canyons, gas blowouts existed and the oil oozed from the broken strata. This seepage oil was uniformly thick and black, owing to the volatile constituents having evaporated or been distilled from the surface rocks by the subterranean heat of the deeper buried rock series. In regard to the extent of these oil springs, it may be said that they vary from a mere trickle down a cliff, to the great seepage of Sulphur Mountain, at which point there is a continuous line of asphaltum beds and tar springs over a length of three miles by one-quarter of a mile in width. The pioneers of the oil industry in California, feeling confident that here lay one of the great petroleum fields of the world, succeeded in enlisting Eastern capital with almost no difficulty; the half dozen most favorable looking points were selected alongside of prominent tar beds, six rigs were put up and six wells were drilled. By a strange mischance of Providence, all six came in dry holes. This was a blow to which less valiant men would have succumbed, yet it was known that the oil was there, and soon the solution appeared. All the wells had been drilled on the wrong side of the seepage. had passed through non oil-bearing strata only, and were productive of but a little water and gas. As a final resort other wells were drilled back of the seepage instead of in front of it, and paying quantities of oil inevitably appeared, increasing in volume as distance and depth were gained. It then began to be noticed that in the larger part of the seepage zones, the formation had a very steep dip, and it was necessary in fact, to plan the driving of the well with great care, or the productive sand would be missed entirely. Ten feet one way or the other with the well would make a difference of a hundred feet or more in the depth of the bore. The steeply inclined deposits were drilled first, and the troubles incident to this class of oil exploitation form an interesting chapter in the archives of the Union Oil Company.

Making the Market.

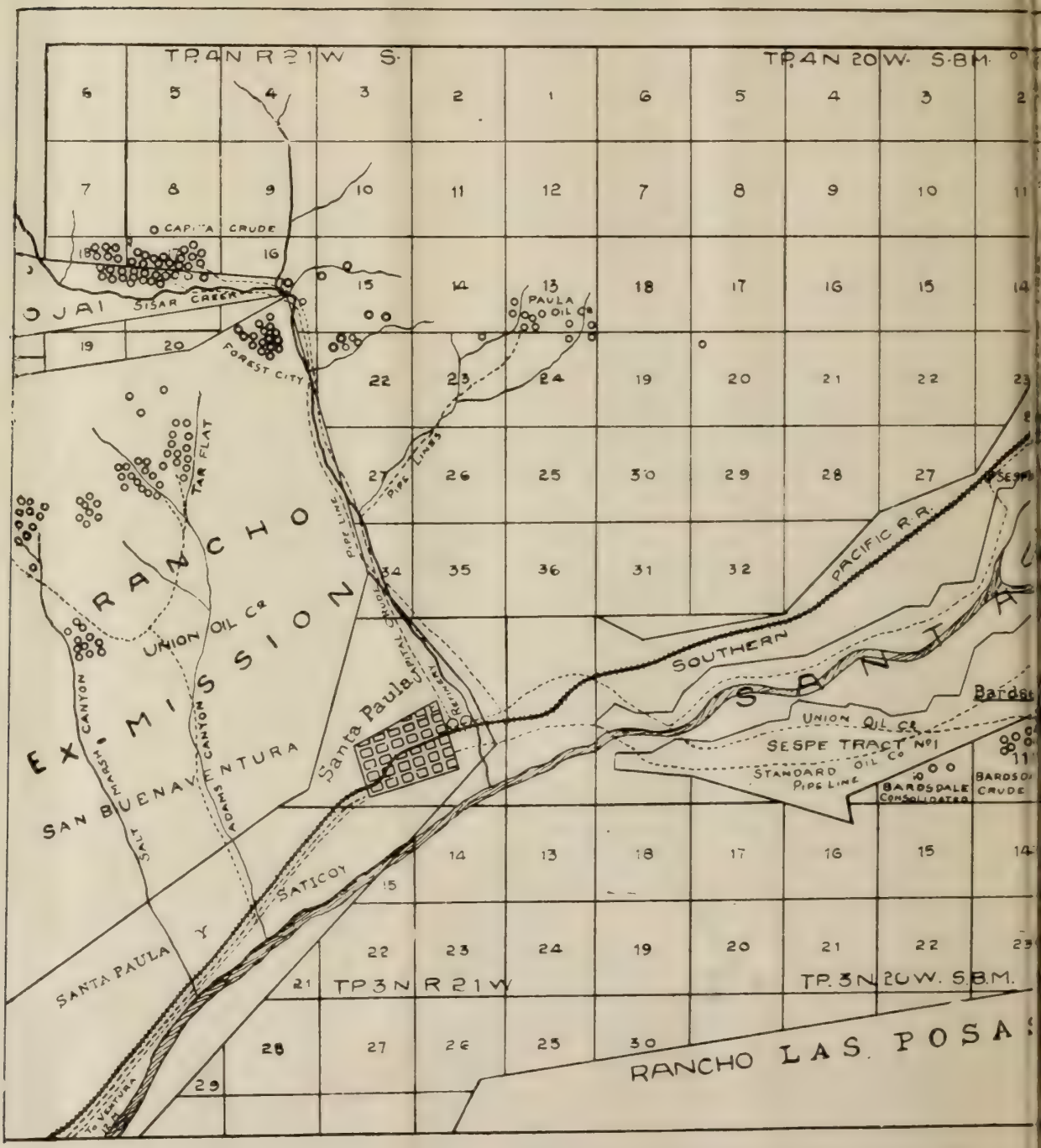
It may accurately be stated, that as regards the pioneers of the industry, the production of the oil was but the beginning of their troubles. As more and more wells began to be opened, the main question became how to convert the petroleum into money. The use of crude oil as a fuel was then but little known. The railroads and their allied coal mines on one hand, and the insurance companies and national prejudice against an untried fuel on the other, all combined to throttle this infant industry. For every car of oil used in the manufactures, 2½ cars of coal with its relatively longer haul was displaced. Finally a demand came to be felt, but not knowing the life of the wells, the original Union Oil Company was deterred from making long time contracts which alone would warrant the heavy consumers from changing their steam system to the use of liquid fuel. The beginning of the second epoch in the business came about in a peculiar way, almost as dramatic as the opening of any other great mineral field in the history of the country.

The Wild Bill Gusher.

Ventura County as now known is a region of comparatively shallow wells with an extremely long life. Yet in its earlier career it also figured in gusher history. Well No. 16 at the Tar Flat Field of the Union Oil Company, came in at 3100 feet, throwing oil and sand over the top of the derrick. At first it flowed regularly at the rate of 1200 barrels a day, raising at times to perhaps ten times this amount, and being

Map of Ventura County—Showing Oi

Drawn By H. J. JORY



uncontrolled, the oil stream reached 13 miles to the sea. Seeing so much oil in sight, the company entered into contracts, which in the light of modern wisdom, would seem to have been rash. Indeed this proved to be the case, for no sooner was its product well provided for than this first great California well blew itself out, its production ceasing almost as rapidly as it had begun. Thus suddenly cut off from its calculated supply, the great pioneer company of the Western Field was compelled to drill in all the known districts of the county on a scale fourfold greater than it had hitherto done, in order to fulfill its contracts. Sespe, Tar Creek, Torray Canyon, and Bardsdale, successively became the scene of remarkable activity, and the result is now seen in the great system of pipe lines radiating to all these fields. The coming in of Wild Bill, made the market, and its failure caused the exploitation of the most prominent high grade oil field of the West.

The Genesis of Petroleum.

The Ventura County field is an open book to the geologist. Added to the unusual crushing and distortion of the strata

oducing Districts Wells Drilled, Etc.

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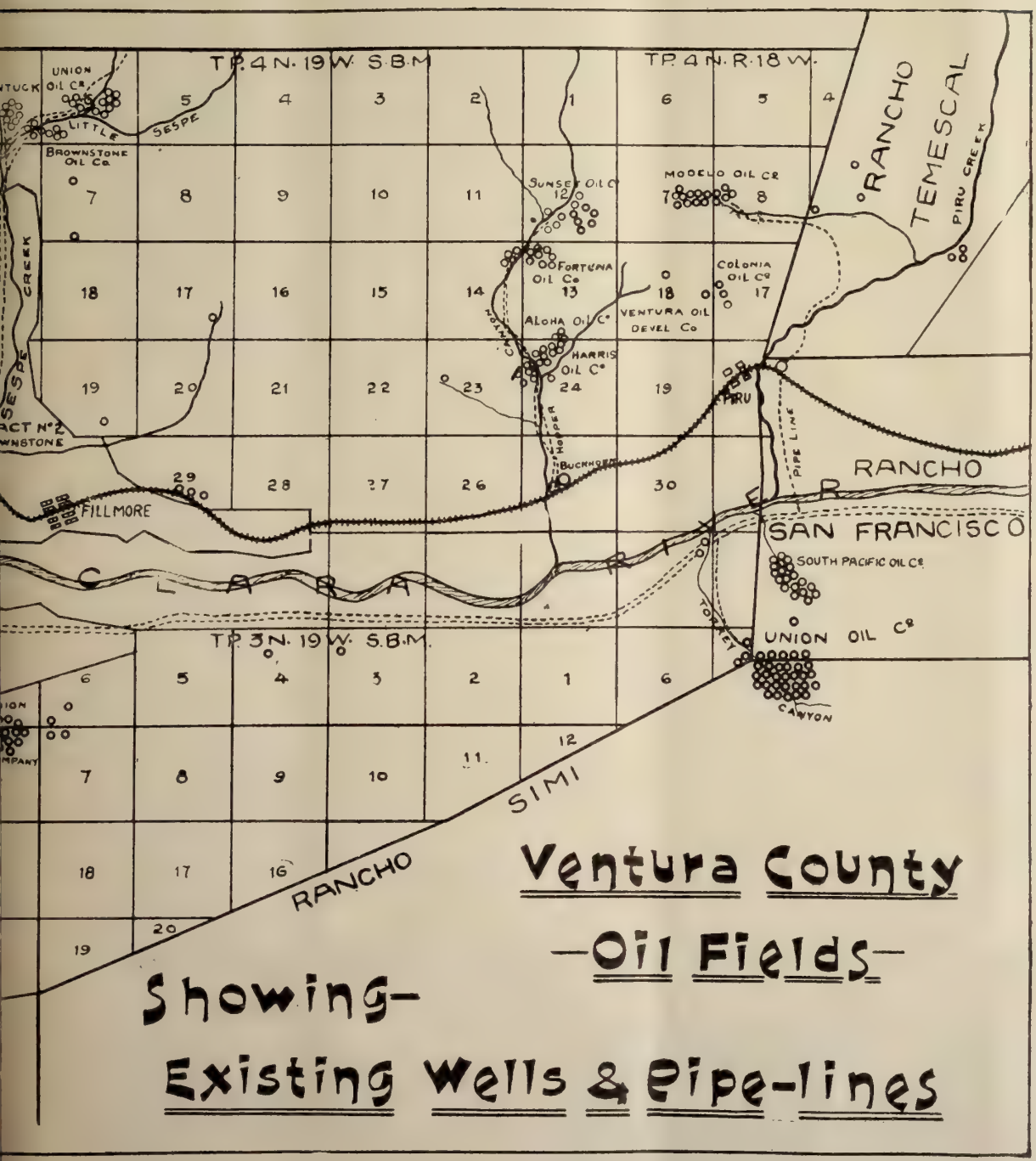


is a very rough topography, causing the entire rock series to be often in view along their broken edges, and the actual oil bearing strata to be exposed in situ. Vast shell beds, with a lesser amount of vertabrate remains, mark the upper and middle miocene, the topmost series of the oil formation. Below with great uniformity lie the Vaqueros shales, the actual source of the petroleum. These shales to the eye appear fine grained and calcareous, yet under the microscope, the main body appears to be made up of siliceous casts of so-called diatoms, a form of marine algae, which existed in countless numbers in the depths of the Mesozoic sea. At times a microscopic drop of oil may be seen marking what was once the life tissue of the animal. Without a doubt, this diatoaceous marl covers a vast area, yet the particular reason that causes it to be productive only along certain defined belts, leads us quite naturally to the adoption of the

Anticlinal Theory.

The anticline is a certain form of rock wave in which the highest portion of the strata approaches most nearly to the surface of the earth. The subterranean pressure producing

the uplift, has crushed and broken the oil bearing strata as one might press the moisture from a sponge, causing the oil to exude therefrom and find lodgement in the sandstone below, also crushed and broken so as to act as a natural reservoir. The shales themselves being fine grained and almost pasty, yield their oil with difficulty, but upon the sand reservoir being drilled, the oil contents immediately become available, and if sufficient gas be present, the pressure may be sufficient to throw the oil above the top of the well. In the great majority of the Ventura wells some little spouting and gas action is evident at the start, but the well soon settles down to a pumping basis, yielding about 100 barrels of light oil per day. Gas engines are used for pumping each series, the gas being furnished by one well of the group for this purpose. A very small proportion of the drilled wells have been exhausted, and the average life of the Ventura bores may be stated as not less than 20 years, thus making the longest lived oil wells of the world.

(To be Continued.)

ELECTRICITY FOR OILFIELDS.

It is said that the San Joaquin Light and Power Co. will shortly furnish electrical energy to a large part of the San Joaquin Valley. The territory from the Tehachapi on the South to Merced on the North, including the oilfields of Western Kern Co., will be embraced by the plans. The company recently purchased the Bakersfield Light & Power Co. and the Merced Electric Co. and have practically no competition in the territory which it is proposed to electrify.

OILBURNING DESTROYER MAKES THREE KNOTS MORE THAN CONTRACT REQUIREMENT.

With its contract requirements calling only for a speed of 28 knots an hour, the torpedo boat destroyer Roe made 31 knots in its standardization tests off the Delaware breakwater course, according to a report received at the navy department from the board of inspection when the tests were recently gone through with. The Roe is the first destroyer or the exclusively oil burning type. The standardization tests will be followed by others of a different nature.

The Buckeye Oil Company, through U. S. Waugh, has secured the holdings of the Enterprise Oil Company on the east side of section 22, 28-28, in Kern River district, and as soon as the organization is perfected will start operations. The land is on the east front of the Kern field and undeveloped, but good prospective oil land. The Buckeye was organized by W. A. McCray, A. J. Johnson, Frank Baker and George Pierson, Jr., all of Los Angeles.

RECENT PATENTS.

The following patents recently granted of interest to the oil trade are reported expressly for the California Derrick by J. M. Nesbit, Patent Attorney, Park Building, Pittsburgh, Pa., from whom printed copies may be procured for 15 cents each:

Apparatus for the purification of oils and similar bodies, Otto Brucke, Frankfort-on-the-Main, Germany, 963,510.

Well screen, William Harmon, Tiffin, Ohio, 963,549.

Pipe grip, F. M. Kenoyer, Sunrise, Neb., 963,584.

.Well drilling apparatus, Lawrence Schultz, Buffalo, N. Y., 963,657.

Pipe tongs, G. A. Lane, Florence, Cal., 963,903.

Foundation for derricks, M. R. Zahniser and M. J. Zahniser, Washington, Pa., 964,140.

Rotary well-boring box and pin, M. H. Whittier, Los Angeles, Cal., 964,353.

Pipe coupling, James Clark, Bradford, Pa., assignor to S. R. Dresser Mfg. Co., same place, 964,609.

Well casing, Paul Hardy, Walnut Springs, Tex., 965,181.

Tool for lowering and raising well tubes, Paul Hardy, Walnut Springs, Tex., 965,182.

Method of and apparatus for pumping oil and other wells, Benjamin Fulton Gardner, Chicago, Ill., 965,287.

Mechanism for transmitting power, T. F. Weiland, Phoenixville, Pa., 965,348.

Expansion plunger for well pump cylinders, W. F. Jacobs, Ottawa, Ill., 965,466.

Rope Socket, W. B. Greeves and L. J. Black, Beaumont, Tex., 966,011.

Wanted to Buy or Contract.

An Independent Refinery wants to buy or contract for several thousand barrels per month of light gravity oil for refining purposes, State gravity of oil and price. Address,

INDEPENDENT REFINERY

Office of California Derrick.

Lacy Manufacturing Company

Office, 334 North Main St. Baker Block, Los Angeles

P. O. Box 565, Station C. Telephone Main 196

Works: Cor. North Main and Date Streets

Manufacturers of

Steel Water Pipe
Oil Well Casing
Oil Stills

Oil and Storage Wagon Tanks

General Sheet Iron Works

SUNSET—MIDWAY—McKITTRICK

ANOTHER PIPE LINE FROM MIDWAY TO COAST.

CAPTAIN JOHN BARNESON
Successful Oil Magnate

It has become known that Captain John Barneson, the well-to-do ship-owner who has enjoyed enviable success in his oil ventures, is about to build a pipe line from the Coast straight across the mountains to Midway. In regard to this important information the Midway Driller, which is generally to be be relied upon, has the following in its issue of July 30th: "Captain John Barneson was here this week, inspecting the several properties in which he is interested.

"While here he let it be known that he contemplates financing or taking a leading part in the building of a new pipe line to the Coast. Surveyors are to be started at once on the work of locating the most available route, he said.

"The proposed line will start from Midway, the terminus to be at a point on the Santa Barbara Channel. The details of the line have not yet been worked out, but Captain Barneson's position in the oil world assures its success should he have the work begun.

NORTH MIDWAY NOTES.

By L. T. Kibler.

The American Oilfields, who spudded in their first well on February 15th, last, have seven strings of tools running at the present time and to date have produced more than 500,000 barrels of oil, the present daily production being in excess of 17,000 barrels.Their new gusher on 36, 31-22, struck at a depth of 885 feet, is producing about 12,000 barrels per day of 21¼ degrees gravity, Beaume. The company will pay a 4% dividend, October 1st, this year. Their stock is hard to find at $60.00 per share.

The Amber Oil Company is deepening its well. It had reached the overlying shaleunder which the main sands are found here, at a depth of 1740 feet.

The Manchuria Midway Oil Company, operating on section 26, 31-22, has landed its 12½-inch casing at 840 feet and is now down 900 feet with the 10-inch. This company was recently organized by navy people and associates. Indications are good and a large well is confidently expected.

The Pyramid Oil Company, operating on section 26, 31-22, is making good progress, being down 900 feet with 12½-inch casing. G. S. Johnson, who secured three sections of land near Buena Vista Lake recently assigned the property to the Pyramid Oil Co., of which he is the President. The official description of the property is as follows: Sections 78, 20 and 30 of township 32, range 25. The Pyramid has in all some 1600 acres of land in North Midway and other holdings in the Ventura field.

CONSOLIDATED MIDWAY'S WELL.

The great well of the Consolidated Midway Oil Company, on section 30, 12-23, one mile east of the Lakeview, news of which was given in our last issue, is reported to have had a very narrow escape from the fire destroying the derrick, consuming 5000 barrels of oil in storage in the sump and causing a loss to the company of approximately $5,000. The only thing which saved a terrible conflagration from taking place was the fact that the well was capped. The company had just made its first shipment when the fire occurred. They will hereafter pipe their oil to the loading racks constructed by the Producers Transportation Company in Maricopa, which they have now acquired. They will ship eight carloads per day. The oil is said to be selling at only 48 cents per barrel.

The Consolidated Midway's well is estimated to be good for from 10,000 to 30,000 barrels of oil per day at the present time. The oil tests 21 degrees, Beaume. The company is not offering any more of its treasury stock at less than par. It is almost ready to bring in two more wells, both of which will be completed, it is said, within the coming forty or fifty days. The wells are in the large-producing territory.

HUGE WELLS OBTAINED DURING MONTH JUST PAST LAKEVIEW SANDS THRICE TAPPED AND GUSHERS COVER MIDWAY.

The Midway field, from Sunset to North Midway, is now without any exception the greatest proven oil field in the world. From one end to the other the district is covered with gushers the like of which have rarely, if ever, been known; and the gushers which have recently been brought in near the Lakeview, at Maricopa, including that breaker of all records, have no parallel in recent oil history. On August 3d the news spread like wildfire that on section thirty-six, near Taft, two new gushers were flowing on an average of from 60,000 to 70,000 barrels per day, for the two, or from 30,000 to 35,000 barrels per day each.

The Santa Fe, brought in about two weeks previous to the time when the flow had increased to 30,000 barrels, is located on the northeast corner of the southeast quarter of the section. The other well is No. 79, of the American Oilfields Company, located on the east line of the southwest quarter. This well was mentioned in our last issue as a large well, but it had by no means developed at the time when we went to press, into the well which it has later proved. On the 2d of August the well became entirely unmanageable; breaking all restraints the forces behind the flow of oil tore off the gate, and with a roar the black stream was hurled towards and above the crown block. Men were hurried to the scene. Teams and scrapers were rushed onto the land and a hurried gang of workers labored feverishly at the task of building a large, open, earthern reservoir. At the time of writing the oil was still gushing past control, high into the air, breaking into spray and scattering about the adjacent landscape. Strange as it may seem, this well is scarcely more than 1,000 feet deep; a freak formation has been struck by the American Oilfields in the well, which was finished with a single "string" of 12½-inch casing. The Company's well No. 74, similar to this in almost all respects, is located close to it and shows signs at present of an eruption like that of 79.

PURCHASING AGENCY PROPOSED.

The formation of a purchasing agency is being seriously considered by a number of large fuel consumers of Los Angeles, who, among them consume about 5,000,000 barrels of oil per annum. Our correspondent says that if the plans go through the New Purchasing Agency will build its own pipe line from the fields direct to Los Angeles. Nothing has been definitely decided upon as yet.

SUNSET MONARCH'S GUSHER.

The Sunset Monarch Oil Company has another of the big ones. Located on the north line of fractional section 26, 12-24, less than a mile from the Lakeview and but a short distance from the new well of the American Oilfields, the new well which is astonishing Midway has come in at a depth of 2270 feet. Immediately the sand was perforated the oil shot forth with a tremendous rush, going away above the top of the 84 foot derrick. For three hours this well kept up an uncontrollable flow, at the end of which time it sanded up and stopped, having made at a very conservative estimate about 2000 barrels of oil. This is another of those cases where pure courage conquered adversity and won out of all proportion. We are told that the drill struck a sand containing hot water at a depth of 1600 feet; that the superintendent, "threw up his hands;" that orders from headquarters were given to go through the sand and get the oil anyway; that orders were obeyed but no oil or indications of oil were discovered for more than five hundred feet after the water sand had been passed through. Then, at 2270 feet, the Lakeview sand was struck. The courage and intrepidity of the management was justified. The Company owns much valuable land in this region. It also owns and operates an asphalt refinery in Maricopa, recently destroyed by fire, and still more recently rebuilt. The Sunset Monarch is one of the true pioneers of the Sunset-Midway region; they were operating before the pipe line entered; before the railroad had been thought of; when all supplies had to be trekked across the desert between the scene of their operations and Bakersfield, fifty miles away.

LAKEVIEW OIL COMPANY.

The Lakeview has subsided to some extent. It now flows "only" between 22,000 and 30,000 barrels per day. Fear is expressed that the fall rains may wash out the earthern retaining embankments forming the reservoirs which contain the greater part of the Lakeview's output, and allow the enormous flood of oil to pour down into Buena Vista Reservoir, which irrigates so many thousands of acres of lands, thus causing general losses of millions of dollars. Everything possible is being done to strengthen the embankments, according to latest reports.

MAYS OIL CO'S. WELL.

The big gusher of the Mays Oil Company on section 30, 32-23, Midway, which came in a short time before the Lakeview, and which has spouted intermittently, sanding up after each outbreak, is now under thorough control and is now doing about 3,000 barrels of oil per day. A strainer was placed in the Mays to control the sand and since that time the well, which came in like a volcano, shooting oil away over the top of the derrick, has been flowing minus trouble and with the utmost steadiness. The flow is regulated by a valve. Mays oil goes to the Associated Company.

AMERICAN OILFIELDS DEVELOP "FRONT" PROPERTY.

J. E. O'Donnell, field superintendent for the American Oilfields, says that company will soon start work on two wells on its holdings on the "front," east of McKittrick. The success of the Bobby Burns on section 8, 30-2, and the Mahaska on 36, 29-21, the first named a mile southeast of the Nacirema and the Mahaska the same distance northwest, has demonstrated the existence of the oil sands under a wide area. The holdings of the American Oilfields are shown on some maps as the Midland Petroleum Company.

The Dominion Oil Company's well on section 15, 31-22, near Taft, which is now pumping 200 barrels a day of 17.2 gravity oil from an upper sand, was originally drilled to 2000 feet, and for the last 1200 feet had nothing but brown shale.

AMBER ELECTS DIRECTORS.

At a recent stockholder's meeting of the Amber Oil Company, William Houser, O. F. Rinaldi, S. K. Dickerson, C. J. McDivitt, and Dr. G. A. Knox, all of Randsburg, were elected directors. The officers of the company, to be chosen by the directors, will probably be the same as before. The Amber Company's property is located on the west side of section 26, 31-22, a mile and a half beyond the big well of the Santa Fe on 24. It was the pioneer in that section, bringing in a small well of heavy oil several months ago. Recent developments have convinced the management that the hole never reached the big sand, and it is now being deepened.

THE REGAL FLOWING.

The Union Oil Company's Regal well, a mile and a half west of Taft, is now flowing steadily at the rate of 3,000 barrels per day. The Regal came in with a tremendous force, was capped, and is now one of thhe best producers in Midway.

CALIFORNIA HILLS WILL INSTALL COMPRESSED AIR.

The California Hills Oil Company is now considering the installation of compressed air for raising the oil. The Sunset Monarch has thirteen of its sixteen wells on air, and it is stated that the air keeps them free from sand. If the general manager, H. E. Wooos, decides to use air it is probable that it will be secured from the Monarch plant. Woods is also considering two bids for oil, one from the Sunset Monarch and one from a Los Angeles refinery.

MORON IS NO MORE.

The name Moron has been dropped from the Southern Pacific time-tables and letter heads and is no more. From now on Moron, Boust and Taft will be known by the P. O. name of Taft only. Taft is to be incorporated in the near future.

K. T. & O. COMPLETES RIGS.

Two rigs have been finished by the K. T. & O. on section 31, 12-23, near Maricopa, where the company's main camp and supply yard are located, and two on the east line of section 1, 12-23, which gives the company line wells on both the north and west of the Maricopa National. The company is shipping heavily from this field by rail.

"OIL IN RABBIT VALLEY."

There is a report current that the Standard Oil Company has struck oil in Rabbit Valley, west of the mountains, says the Midway Driller. Wildcat operators say that there is a light oil stratum running clear through that country to Half Moon Bay, no great distance from San Francisco. A Coalinga concern is wildcatting here and it is thought that they are the parties responsible for the rumor, which started when the Standard recently hauled a perforator to their property in the valley.

KALISPELL-MIDWAY OIL COMPANY

The Kalispell-Midway Oil Company has recently been organized and will operate on the ten-acre lease from the Hale-McLeod Oil Company in what is popularly called the "gusher belt," in the North Midway field. The lease is on the ten acres in the northeast corner of the southwest quarter of section 5-23-23, lying between the Midway Five and the St. Lawrence.

DEVILS DEN CONSOLIDATED LEASES TO U. S. OIL CO.

The United States Oil Company, a new corporation in the Devils Den district, has secured a lease from the Devils Den Consolidated Company to develop twenty acres of its holdings in township 25 south, range 18 east, with clause conveying title to the twenty acres when a well producing oil in commercial quantities has been developed.

VENTURA OIL DEVELOPMENT COMPANY GETS GOOD WELL IN No. 2.

Reports from the Ventura Oil Development Company are to the effect that Well No. 2 has passed through twenty feet of sand and seems to have run into the main body at 560 feet, being 580 feet down at the present time. Well No. 3 looks to be a considerably deeper well, and it is not expected to get into the main sand before a depth of 750 feet is reached..

EXPLOSION.

Four men narrowly escaped death and several others were badly injured in the early part of the month when a terrific explosion occurred in the gas well on the Standard Oil Company's property, section 26, 31-23, Midway, about five miles North and West of Taft. This is the same gas well which caught fire about two months ago and which was extinguished by the use of steam from six boilers, especially rigged up for that purpose. The Midway Driller gives the following account of the explosion:

"The well was being capped at the time of the explosion and the vent was closed. The great pressure of the gas, estimated now at 2, 000 pounds to the square inch, was too powerful for the cap, surrounding iron casing, cement and tamped earth, to control. There was a sudden undulation and heaving of the earth at the surface, and then, before the men could get away, there followed a tremendous explosion throwing men, piping, cement and derrick high into the air. The blast destroyed the derrick and blew out a hole about twenty feet across and fifteen feet deep. Men and debris fell back into the hole. The derrick and piping were scattered in many pieces over the surrounding hills. One length of 15½-inch casing which was cemented in, and a chunk of cement ten feet long and several feet in thickness, were blown out."

All the men were doing well at last reports, but had suffered very serious injuries. The well is being cared for. Another gas well fire occurred on the Laymance property on section 20, 31-23, Midway, quite recently.

During the latter part of July, Pearson's Magazine sent out a party of about twenty Eastern capitalists consisting of alleged millionaires and their representatives, in charge of Mr. "Jack" Merrill of N. Y., on a general inspection tour of the oilfields of the State of California.

The party saw the West Side oilfields and Kern River, first viewing the old Los Angeles and the Sherman fields. In Los Angeles the party was the guest of the Chamber of Mines and Oil. The trip was made for the purpose of determining, by actually seeing the oilfields, whether or not the magazine should accept advertisements from oil companies and their agents. It was believed that such a party could best tell whether or not such ads should be accepted. The trip was a decided success. It will be written up by a member of the party and will appear in an early edition of Pearson's. Such projects will doubtless be undertaken by other Eastern publications in the future, now that the way has been blazed.

GENERAL NOTES

PICO OIL CO. GETS EXCELLENT WELL.

Advices from Fullerton say a 500-barrel flowing well has been brought in by the Pico Oil Company in Brea Canyon. The hole is 2700 feet in depth.

Further advices from Fullerton state that forty-four strings are busy in the Fullerton and Brea Canyon districts and two in the Puente Hills, indicating that despite one or two decisions to curtail further developments there is little sign of a slow-up in work; too many wells were under construction when the Lakeview came in. In the Olinda section the Puente is drilling two, the Santa Fe eight, the Industrial ten, Olinda Land two, Columbia three, Graham and Loftus six, besides the one suspended in the La Habra valley. In Brea Canyon the Union has four strings, the Brea Canyon two, Minges two, Orange one, Ben Scott one, Pico two. In the Puente Hills the Puente has two strings.

OIL WORK IN NEWFOUNDLAND.

The Paint, Oil and Drug Review has the following on developments among the Newfoundland (Canada) oilfields: "According to advices from our Canadian correspondent the Newfoundland Oil Fields Company has already obtained oil in the shallow wells of a former local company, and it is proposed to sink deeper wells. The company has seventy square miles, of which about ten square miles has proved to be oil-producing. The Newfoundland government is lending its support to the industry by the remission of duty on the machinery in connection with the work.

LARGE WELL IN SHERMAN FIELD.

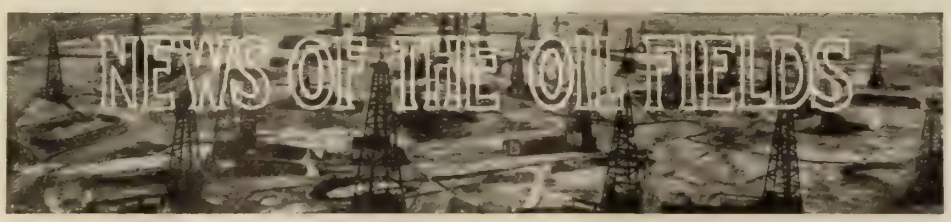
An 1800-barrel well on the Pacific Petroleum lease near Beverly, property of the Associated Oil Company, is a new arrival and the most robust producer brought in by operators in the Sherman field for a year past. The hole is 2800 feet deep, having been finished with the cable tools after 2500 feet had been bored with the rotary.

OIL BURNER ESCAPES FLAMES.

Upon the burning of a pier of the Metropolitan S. S. Company in New York recently, the oil consuming ship Harvard was saved from serious damage by the flames only because she was able to get up steam almost instantly. Inside of five minutes the steamer had enough of a "head" on to steam from her moorings with the loss only of blistered paint. The N. Y. Herald made this fact the subject for an editorial in the news column.

UNION LABOR ENTERS OIL-PRODUCING BUSINESS.

A company composed of union labor leaders and working men has been organized under the name of the Sunset National to drill on eighty acres on section 34, 12-23, four miles southeast of the Lakeview. The land is leased on one-eighth royalty from George Hay and associates of Bakersfield. The following are the officers of the new company: O. A. Tveitmoe of San Francisco, labor leader, president; G. A. Griffin of the Bakersfield division of the B. R. T., vice-president and field superintendent; W. A. Engle, treasurer; L. W. Butler and Stanley B. Wilson of Los Angeles Typographical Union, Walter G. Matherson and Arthur A. Hay, Los Angeles, of the International Typographical Union, secretary and general manager.



Reported by
Special Field Representatives
of the
California Derrick

COALINGA NOTES

By Guy H. Salisbury

[Editor's Note: Mr. Salisbury gives us here some editorial matter mixed with history; his own personal views upon a subject of which he is a recognized authority. His news items, always accurate and thorough, follow the editorial matter.]

The conditions that confront us today in the oil industry on this Coast are many and varied in character. A sudden surplus of oil has been caused by the incoming gushers which the Midway has suddenly poured upon the producer from one end of that vast field to the other. This, at a time when we were in the midst of adjusting conditions to new markets; conditions quite different from those prevalent in 1908. At that time there appeared upon the horizon of the industry, in the market quarter, a "bear" sign. Our contracts of 1908 were about to expire. With the single exception of the Union Oil Company the marketing concerns hung out a sign, plainly visible, "Forty Cent Oil." The conditions did not appear to warrant such a drop in price. The independent operator was therefore impatient over the matter. The proposition of a change in price from year to year did not appeal to him. Organization appealed to him as the remedy. The great marketing concern of California, outside of what appeared and was a combination against the independent producers who were growing in strength and importance daily, was the Union Oil Company of California. Joining with the Union the Independents formed the Producers Transportation Company and built an eight inch transporting pipe line to Port Harford, which line will now have to be paralleled over the mountains from the junction of the Coalinga line with the Kern River-Maricopa-McKittrck line.

When the combination of the Union Oil Company with the Independent Producers Agency had been effected and heralded as the saving of the producer, the latter, in disposing of his oil to the sales agent, the Union, found that the average price would be considerably reduced by the fact that there were a number of long time contracts at a rather low rate; and also that the sales agent expected to get its oil at a minimum. The shaping of so large a business, even in the hands of the most competent men, takes time to get all machinery and all avenues of trade in perfect harmony. The situation is now fast improving, the old contracts are running out, the new contracts at better prices, are beginning to predominate in the list of sales by the sales agent. The broadening of the market under the generalship of L. P. St. Clair and associates, has extended by their efforts to the far North, is now seeking the trade of great mining districts in Arizona, has crossed the ISTHMUS OF PANAMA, to invade the Atlantic with a superior fuel for liners which compete for place among the swift, where time is an important factor. The present surplus of oil is therefore an argument that we can, and we MUST, provide a large storage of oil to guarantee delivery on long term, large contracts. The market is expanding rapidly; demand which will work better prices for the producer is consequently on the increase. There are many evidences of this increased demand for fuel oil by the great marketing concerns, the Standard Oil Company and the Associated Oil Company, both of which are reaching out and building up a great market for our fuel oil, attesting this fact. We are informed that during the month of July the Associated obtained a large loan of fuel oil from the Standard, being unable to supply a sudden new demand. The Standard Oil Company, with a SUPERB SYSTEM reaching around the world, has been very active in the market and is now expanding its markets for refined oil in the future. The Southern Pacific has demonstrated the superiority of oil over coal in the enormous freight engines now being used; these engines would be beyond the range of possibility with coal as fuel. For these reasons there is an inclination, very general, that tends towards an organization through which to meet the various changes and conditions which confront us today. Many of these conditions are working out through the endeavors of our sales Agency, and, by the use of oil storage receipts, by which the weaker companies may realize on stored oil, the very surplus that has staggered some of us now opens possibilities for the immediate realization of capital and at the same time stands as a guarantee to the purchaser of oil that his will be assured of delivery. The Government is even stimulated to the use of more fuel oil in the navy department. Thus there is today a very much more secure feeling than was generally felt a month ago; and I think I may say that this feeling of security is very justifiable.

The Kaweah Oil Development Company, section 30, 21-16, are 3,100 feet deep with rotary. The water was cemented off at 2200 feet with 6⅝-inch casing. Formation, dark brown shale, carrying a large amount of gas. The Directors and some heavy share holders visited the property last week, they speak guardedly of the prospects, but the "we've got it" expression on their faces would indicate conditions were very favorable. This property lies about two miles east of the defined oil measures, and in consequence of this fact is being watched very closely by owners of land very near this well. This brown shale may be the cap rock that crops to the surface through section 25, 21-15, where a sand showing oil traces lies directly under the brown cap rock.

The British California Oil Company, Limited, has taken over the Wabash Oil Company property, the north 80 acres of the northeast quarter of section 24, 20-14. The Wabash has 17 producing wells which will give the new company a nice production to start off with. The British Consolidated Oil Corporation, Limited, the older company in this field, is under the same management as the British California, Clarence B. Wisner, general manager of both companies. On section 16, 20-15, are drilling a deep well, using a combination rotary-standard rig. This week a change was made from the 6-inch drilling pipe to a 4½-inch; are now 2400 feet deep.

The Southeastern Limited Oil Company, section 18, 20-16, are rigging up rotary for well No. 2. They will drill out the cement plug in well No. 1 this week. Expectation runs high on this well, as it is one mile and one quarter southeast of the Coalinga Mohawk well, on the same slope of the anti-

cline, will be about 100 feet deeper than the Mohawk, about 4000 feet deep to the big pay sand. This well will extend the field south from the Mohawk for over one mile should she come in a good well.

The Coalinga Mohawk Oil Company, section 12, 20-15, are 2200 feet deep with standard tools in well No. 3, carrying 12½-inch special casing. This well was drilled to this depth in about 90 days, a record for the Mohawk district of the East Side, and had done much to encourage owners of land in that part of the field. Well No. 2 is over 1800 feet deep; well No. 4 is being spudded in, 18-inch hole; well No. 1 is a fine producer, making an average of over 1000 barrels per day.

The Union Oil Company, section 4, 20-15; the "La Vista" well No. 4, is 1000 feet deep with 12½-inch casing. The "La Vista" well No. 1, (the old Claremont) moving the heavy 6¼-inch casing, preparing to drill deeper, work progressing. The "Guiberson" lease, the south half of the northeast quarter, are 725 feet deep with 12½-inch casing.

The Coalinga-Monterey Oil Company, operating 60 acres in the northwest quarter of section 4, 20-15, are 1700 feet deep; formation, blue shale. The log is checking up with the Empire well No. 1 on section 32, 19-15, about three fourths mile northwest

The Light Oil Extension, operating on the southwest quarter of section 6, 20166, are 2025 feet deep with rotary, carried down the 12½-inch casing to 1850 feet. The rig will be rebuilt and strengthened; the hole will be finished with standard tools.

The Coalinga Peerless Oil Company, section 22, 19-15, are re-drilling well No. 11; will complete the well in the next 75 feet. Well No. 19 is now in the sand, making a good showing. The rig for well No. 20 is now building.

The Coalinga Metropolis Oil Company, section 26, 19-15, are 3120 feet deep and in oil sand with the 14½-inch string. Superintendent Wilcox looks for a big well with the present indications.

The Castle Oil Company, section 4, 20-15, are 1120 feet deep with 12½-inch casing; formation, running similar to that of the Empire on section 32, 19-15.

The Coalinga Eight Oil Company, section 8, 20-15, are 1500 feet deep with Parker rotary; formation, hard strata of dark gray sand.

The Republic Oil Company, section 32, 19-15, are 1800 feet deep in well No. 1 with 10-inch casing; formation, running with Empire well No. 1 on same section.

The Coalinga Security Oil Company, section 8, 20-15, are cementing off the water with the 6⅝-inch casing in a brown shale clay. The well is being completed with the rotary.

The Coalinga National Petroleum Company, operating section 8, 20-15, has a fine well in No. 1. Oil men who have visited the well have made estimates as to the production and report the well doing better than 500 barrels per day of very clean oil estimated to be of 17 degrees gravity, Beaume. A little sand has occasionaly bothered but no water or silt is found in the oil. The company has issued a statement to its stockholders in which it is said the well is making about 500 barrels per day; that owing to the condition of the oil situation at this time, well No. 2 will not be commenced until September. The present indications are that the combination rotary standard method will be used to about 2000 feet, finishing with the standard tools. The company has just completed a large covered receiving tank to care for the present production. The delivering of the production into the receiving tank will overcome considerable loss to the company.

More than 110 oil companies are located on Government land in the Coalinga field. Of these eighty-seven are doing assessment work and have watchmen in possession. Two companies are drilling and a few are producing on the lands recently withdrawn by order of the President. Twenty-two are operating on lands not covered by the withdrawal order.

The production of the American Petroleum Company's well No. 9, which was flowing up to the 12,000 barrel rate ten days ago, has dropped off to a little over 2000 barrels. A few days ago the flow began to increase gradually, and latest advices say it is doing a little better than 3000 barrels. Manager Crumpton states that the company has had no trouble in taking care of the production, and that there seems to be no need of worry over the cry of over-production in that locality.

The California Coalinga Oil Company, operating on section 8-20-15, is 1200 feet deep with No. 2, and has been having considerable loose sand. Well No. 1 is now making 200 barrels per day.

The Hibernia Oil Company, which will operate on the northwest quarter of section 2-23-16, in Coalinga, has material on the ground for a full standard rig and buildings. H. M. Ogilbe of Oakland is general manager.

Well No. 4 of the California Oil and Gas Company, section 6, 21-15, in Coalinga, while being cleaned out began to flow and for thirty minutes flowed 120 barrels by gauge measurement.

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Company.	Bid.	Asked.
Alma	1 00	
Amalgamated Oil	53 00	57 00
American Petroleum (pfd.)		95 00
American Petroleum (com.)	58 00	64 00
Amy		1 50
Apollo		13
Associated Oil Stock	44 50	44 75
Associated Bonds 5s	95 75	
Bay City	2 75	2 80
Blue Moon	21	23
Brookshire	1 55	2 00
California Midway	52⅝	55
California Oil and Gas		75
California Seaboard		86
Caribou	15 00	15 50
Chicago Crude	10	11
Claremont	1 30	2 00
Coalinga Central		53
Columbia	1 15	1 25
Cresceus	70	70
Dabney		10
Del Rey		1 60
De Luxe		1 60
Empire	1 50	2 50
Enos	1 27½	1 32½
Euclid	55	75
Four		15
Fulton	1 35	2 00
Globe		17½
Graciosa		50
Gypsy		50
Homestake		5 00
Illinois Crude		50
Junction	35	50
Kern River	7 00	7 00
Maricopa 36	2 65	3 00
Mascot	2 30	
McKittrick	21	
Monte Cristo	3 37½	3 40
M. & M.		75
Nevada Midway	24	25
New Pa. Petroleum	97½	1 25
Occidental		25
Pacific States Petroleum	35	37
Paraffine	1 05	
Palmer	1 42½	1 45
Peerless	5 50	6 00
Piedmont	15	17
Pinal	7 00	8 50
Premier	86	90
Record	4 00	5 25
Republic	45	50
Sacramento	1 00	
S. F. & McKittrick	20 00	28 00
Sauer Dough		1 75
Section 25	26 25	27 00
Sesnon	8 00	
Shawmut		50
Silver Tip	2 00	2 10
Sovereign	12 00	12 00
S. W. & B.	40	40
Sterling	2 00	2 50
Superior	2 00	
Traders		115 00
Turner	1 70	1 90
Union	102 50	102 50
West Coast (com.)	9 00	9 00
Wabash	1 00	1 50
Wolverine		25
W. K. Oil Co.	3 17½	3 25
Western Union		100 00
Yellowstone	35	40

LOS ANGELES QUOTATIONS.

(Not Quoted Above.)

Company	Bid.	Asked.
American Crude Oil Co.		98
Bear Creek Oil & M. Co.	20	30
Central		2 00
Cleveland Oil Co.	16⅜	17¼
Consol. Midway Oil Co.	22	22⅝
Continental Oil		55
Fullerton Oil	3 75	
Jade Oil Co.	31	
Mexican Pet. Ltd,. (pfd.)	63 25	66 00
Mexican Pet. Ltd., (com.)	21 50	21 75
Olinda Land Co. (Oil)	58	62½
Perseus Oil Co.		35
Piru Oil and L. Co.	17	
Rice Ranch Oil Co.		1 10
Section Six Oil Co.		50
Union Provident Co.	99 37½	99 87½
United Petroleum	105 00	105 00
NON-PRODUCERS.		
Oleum Development Co.	06⅛	06¼

ROMANTIC OIL STORY APPEARS IN SUNSET MAGAZINE

One of the most interesting oil stories which has appeared recently came out in the August Number of the Sunset Magazine, the work of Walter V. Woehlke. The story is beautifully illustrated. Commanding instant and striking attention, the cover, a reproduction of an enormous gusher, presumably the Lakeview, gives an idea of the description of the article to follow.

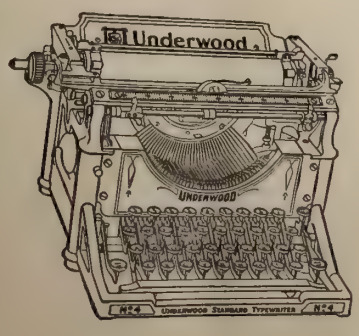
Beginning with the story of the futile efforts of Messrs. Dunn and Barrett to dispose of their holdings in the Lakeview Oil Company, the tale shows how these men suddenly came into possession of the greatest flowing fortune in the world. The romance of the attainment is what is featured. According to the writer of the story of the gusher, the gusher story with its sudden fabulous wealth for the plucky owners is the story of all the oil fields of California and the men who made their fortunes from them. The writer goes on to relate how, away back in 1900, the hills were over-run with prospectors from Bakersfield; how the territory came to be considered a poor proposition because its developers did not appreciate that it was a deep field; how it came to be abandoned; how oil prices suddenly dropped to nothing because the product had as suddenly become a drug on the market, and finally, the reasons for the development of the fields which today are the greatest in the world. The writer, Mr. Woehlke, takes the view that the Lakeview and the other gushers which have suddenly become famous, came in at the psychological moment, and gives his reasons for thinking as he does. They are very good reasons too, and should command the attention of any thoughtful oil man. He relates the story of the strenuous fight of the producers for a market; of the small beginning of the Union Oil Co.; of the introduction of the use of oil as fuel; of the work of E. L. Doheny in the many fields in which he is interested; of the discovery of Kern River and the fortunes coined from it; and of the beginning of the great Coalinga. All this is recorded by Mr. Woehlke, and in a most interesting, romantic, but truthful and reserved manner. Transportation, life of wells, development of new sections of the country—all have been taken up and considered. Much is made of many of the big figures in the oil world today. The photographs of Messrs. Lyman Stewart, President of the Union Oil Co., W. F. Herrin, Porter, Scribner, Matson, Brown, Chanslor, Barneson, McCutchen, Doheney and others, are given in an effort to show the foremost oil men in the State of California. The story and the prominence given it by the management of the Sunset have been a tremendous help in awakening the interest of capital not already interested, "back East." The splendid appearance of the article and the magazine as a whole has been the occasion for a great deal of congratulation and praise for the editor of Sunset as well as the writer of the story. The only trouble with these tales of the romantic suddenness with which our new millionaires get their money, is that they always come sometime after the excitement, and not when the fortunes are in the making. For this reason it looks as though the late printing of such interesting tales were more for the benefit of the stock exchange than for the intrinsic value of the matter itself. But, whatever the motive, the tale was exceptionally good.

OFFICIAL LIST OF WITHDRAWN OIL LANDS

Following is the official list of the petroleum-bearing lands withdrawn from entry by President Taft, July 3d, under the Pickett Bill.

(Mt. Diablo Meridian, California.)

T. 1 N., R. 1 E., all of township.
T. 2 N., R. 1 E., all of township.
T. 1 N., R. 2 E., all of township.
T. 2 N., R. 2 E., all of township.
T. 1 N., R. 3 E., all of township.
T. 1 N., R. 1 W., all of township.
T. 2 N., R. 1 W., all of township.
T. 2 N., R. 2 W., all of township.
T. 1 S., R. 1 W., all of township.
T. 1 S., R. 1 E., all of township.
T. 2 S., R. 1 E., all of township.
T. 1 S., R. 2 E., all of township.
T. 2 S., R. 2 E., all of township.
T. 1 S., R. 3 E., all of township.
T. 2 S., R. 3 E., all of township.
T. 3 S., R. 3 E., all of township.
T. 4 S., R. 3 E., sections 4 to 9, 16 to 18, inclusive.
T. 1 S., R. 4 E., sections 19 to 21, 28 to 33, inclusive.
T. 2 S., R. 4 E., all of township.
T. 3 S., R. 4 E., all of township.
T. 4 S., R. 4 E., sections 1 to 3, 10 to 15, inclusive.
T. 2 S., R. 5 E., all of township.
T. 3 S., R. 5 E., all of township.
T. 4 S., R. 5 E., all of township.
T. 3 S., R. 6 E., sections 19 to 21, 28 to 33, inclusive.
T. 4 S., R. 6 E., all of township.
T. 5 S., R. 6 E., all of township.
T. 6 S., R. 6 E., all of township.
T. 7 S., R. 6 E., all of township.
T. 4 S., R. 7 E., sections 19 to 21, 28 to 33, inclusive.
T. 5 S., R. 7 E., all of township.
T. 6 S., R. 7 E., all of township.
T. 7 S., R. 7 E., all of township.
T. 8 S., R. 7 E., all of township.
T. 9 S., R. 7 E., sections 1 to 3, 10 to 15, 22 to 27, 34 to 36, inclusive.
T. 5 S., R. 8 E., sections 19 to 21, 28 to 33, inclusive.
T. 6 S., R. 8 E., sections 4 to 9, 16 to 21, 28 to 33, inclusive.
T. 7 S., R. 8 E., all of township.
T. 8 S., R. 8 E., all of township.
T. 9 S., R. 8 E., all of township.
T. 10 S., R. 8 E., all of township.
T. 11 S., R. 8 E., sections 1 to 18, inclusive.
T. S., R. 9 E., sections 4 to 9, 16 to 21, 28 to 33, inclusive.
T. S., R. 9 E., all of township.
T. 12 S., R. 9 E., sections 1 to 3, 10 to 15, inclusive.
T. 19 S., R. 9 E., all of township.
T. 20 S., R. 9 E., sections 1 to 3, 10 to 15, 22 to 27, 34 to 36, inclusive.
T. 10 S., R. 10 E., sections 19 to 21, 28 to 33, inclusive.
T. 11 S., R. 10 E., all of township.
T. 12 S., R. 10 E., all of township.
T. 13 S., R. 10 E., all of township.
T. 14 S., R. 10 E., all of township.
T. 15 S., R. 10 E., all of township.
T. 16 S., R. 10 E., sections 1 to 30, 34 to 36, inclusive.
T. 17 S., R. 10 E., section 1, all.
T. 19 S., R. 10 E., sections 1 to 25, inclusive; section 26, lots 1, 2, 3, and 4, ne¼ of n½ of nw¼, se¼ of nw¼, ne¼ of se¼; section 27, lots 1, 2 and 3, n½, n½ of sw¼, sw¼ of sw¼, nwt¼ of se¼; sections 28 to 32, inclusive; section 33, lots 1, 2, 3, 4 and 5, n½ of ne¼, nw¼, nw¼ of sw¼; section 34, lots 1 and 2; section 36, lots 1, 2, 3, 4 and 5, n½ of ne¼, se¼ of ne¼.
T. 20 S., R. 10 E., section 5, lots 1, 2, 3, 4, 5, 6, 7, 8 and 9; section 6, lots, 1, 2, 3, 4, 5, 6, 7, 8 and 9; s½ of ne¼, se¼ of nw¼, e½ of sw¼, w½ of se¼; section 7, all; section 8, lots 1, 2, 3, 4 and 5, s¼ of nw¼, w½ of se¼, se¼ of se¼; section 9, lots 1, 2 and 3, sw¼ of sw¼; section 14, lot 1; section 15, lots 1, 2, 3, 4 and 5 sw¼, sw¼ of se¼; section 16, lots 1 and 2, s½ of ne¼, w½ of se¼; section 17 to 22, inclusive; section 23, lots 1, 2, 3 and 4, w½ of nw¼, se¼ of nw¼, s½; section 24, lots 1, 2, 3, 4 and 5, s½ of sw¼; section 25, lot 1, w½ of ne¼, se¼ of ne¼, w½, se¼; sections 26 to 36, inclusive.
T. 21 S., R. 10 E., sections 1 to 18, 22 to 27, 34 to 36, inclusive.
T. 11 S., R. 11 E., sections 19 to 21, 28 to 33, inclusive.
T. 12 S., R. 11 E., all of township.
T. 13 S., R. 11 E., all of township.
T. 14 S., R. 11 E., all of township.
T. 15 S., R. 11 E., all of township.
T. 16 S., R. 11 E., all of township.
T. 17 S., R. 11 E., sections 1 to 17, 21 to 24, inclusive.
T. 20 S., R. 11 E., sections 1 to 4, inclusive; section 5, lots 1, 2, 3, 4, 5, 6, 7, 8 and 9, s½ of ne¼, se¼ of nw¼, ne¼ of se¼; section 6, lots 1, 2 and 3; section 8, lot 1; section 9, lots 1, 2, 3, 4 and 5, n½ of ne¼, se¼ of ne¼; section 10, lots 1 and 2, n½ n½ of sw¼, se¼; sections 11 to 13, inclusive; section 14, lots 1, 2, 3, 4 and 5, ne¼, e½ of nw¼, n½ of se¼; section 15, lots 1, 2 and 3, ne¼ of ne¼; section 23, lot 1; section 24 lots 1, 2, 3, 4, 5 and 6, n½ of ne¼, se¼ of ne¼, ne¼ of nw¼; section 25, lot 1; section 29, lots 1, 2 and 3; section 30, lots 1, 2, 3, 4, 5, 6, 7 and 8, e½ of sw¼, s½ of se¼; section 31, all; section 32, lots 1, 2 and 3, sw¼ of ne¼, w½, se¼; section 33, lots 1, 2, 3, 4 and 5, w½ of sw¼, se¼ of sw¼, sw¼, of se¼; section 34, lots 1 and 2; section 35, lots 1, 2, 3 and 4, s½ of se¼; section 36, lots 1, 2, 3 and 4, s½ of ne¼, s½.
T. 21 S., R. 11 E., sections 1 and 2, all; section 3, lots 1, 2, 3 and 4, s½ of n½, s½; section 4 to 36, inclusive.
T. 22 S., R. 11 E., all of township.
T. 23 S., R. 11 E., sections 1 to 3, 10 to 15, inclusive.
T. 13 S., R. 12 E., sections 19 to 21, 28 to 33, inclusive.
T. 14 S., R. 12 E., sections 4 to 9, 16 to 36, inclusive.
T. 15 S., R. 12 E., all of township.
T. 16 S., R. 12 E., all of township.
T. 17 S., R. 12 E., all of township.
T. 20 S., R. 12 E., section 1, all; sections 12 and 13, all; sections 22 to 27, 34 to 36, inclusive.
T. 21 S., R. 12 E., sections 19 to 21, 28 to 33, inclusive.
T. 22 S., R. 12 E., all of township.
T. 23 S., R. 12 E., all of township.
T. 15 S., R. 13 E., sections 19 to 21, 28 to 33, inclusive.
T. 16 S., R. 13 E., all of township.
T. S., R. 13 E., all of township.



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T. 18 S., R. 13 E., all of township.
T. 20 S., R.13 E., sections 5 to 8, 17 to 21, 28 to 33, inclusive.
T. 21 S., R. 13 E., sections 1 to 6, 8 to 16, 22 to 26, inclusive; section 36, all.
T 22 S., R. 13 E., sections 19 to 21, 28 to 33, inclusive.
T. 23 S., R. 13 E., all of township.
T. 24 S., R. 13 E., sections 1 to 18, 22 to 27, 34 to 36, inclusive.
T. 16 S., R. 14 E., sections 4 to 9, 16 to 36, inclusive.
T. 17 S., R. 14 E., sections 19 to 21, 28 to 33, inclusive.
T. 18 S., R. 14 E., all of township.
T. 19 S., R. 14 E., section 25, ne¼, se½; section 35, s½; section 36, all.
T. 20 S., R. 14 E., sections 1 to 3, 10 to 15, 22 to 26, inclusive; sections 35 to 36, all.
T. 21 S., R. 14 E., section 1, all; section 2, n½; section 12, all; section 13, n½, se¼; sections 19 and 20, all; sections 28 to 33, inclusive.
T. 22 S., R. 14 E., sections 4 to 6, inclusive; sections, 8 and 9, all.
T. 23 S., R. 14 E., sections 1 to 3, 10 to 15, 19 to 36, inclusive.
T. 24 S., R. 14 E., all of township.
T. 25 S., R. 14 E., sections 1 to 18, 22 to 27, 34 to 36, inclusive.
T. 18 S., R. 15 E., all of township.
T. 19 S., R. 15 E., sections 1 to 4, 8 to 17, inclusive; section 18, se¼; section 19, ne¼, s½; sections 20 to 36, inclusive.
T. 20 S., R. 15 E., sections 1 to 13, inclusive; section 14, n½, se¼; sections 15 to 22, inclusive; section 24, all; section 25, se¼; section 27, w½; sections 28 to 34, inclusive.
T. 21 S., R. 15 E., sections 2 to 11, 13 to 18, 21 to 27, inclusive; section 28, e½; section 34, n½, se¼; sections 35 and 36, all.
T. 22 S., R. 15 E., sections 1 and 2, all; section 5, sw¼; section 6, s½; sections 7 and, 8 all; section 9, w½, se¼; section 10, sw¼; section 12, all; section 13, ne¼, sw¼; section 14, w½, se¼; sections 15 and 16, all; section 17, n½; section 17, n½; section 22, nw¼; section 23, n½, se¼; sections 24 and 25, all; section 26, ne¼.
T. 23 S., R. 15 E., sections 19 to 21, 28 to 33, inclusive.
T. 24 S., R. 15 E., section 1, lots 1, 2, 3, 4, 5, 6 and 7, s½ of n½, ne¼ of sw¼, n½ of se¼, se¼ of se¼.
T. 24 S., R. 15 E..section 2, lots 1, 2, 3, 4, 5, 6 and 7, se¼ of ne¼; section 3, lots 1, 2, 3, 4, 5, 6, 7, 8 and 9, s½ of nw¼, nw¼ of sw¼; sections 4 to 7, inclusive; section 8, lots 1, 2 and 3, n½, n½ of sw¼, sw¼ of sw¼, nw¼ of se¼; section 9, lotlots 1, 2, 3, 4 and 5, n½ of nw¼; section 11, lot 1; section 12, lots 1, 2 and 3, ne¼ of ne¼, s½ of ne¼, ne¼ of sw¼, s½ of sw¼, se¼; section 13, all; section 14, lots 1, 2, 3, 4, 5, 6, 7, se¼ of ne¼,se¼; section 17, lots 1, 2, 3 and 4, w½ of nw¼, sw¼; section 13, all; section 14, lots 1, 2, 3, 4, 5, 6 and 7, se¼ of ne¼, se¼; section 17, lots 1, 2, 3 and 4, w½ of nw¼, nw¼ of sw¼; sections 18 and 19, all; section 20, lots 1, 2, 3 and 4; section 23, lot 2, lot 1 of the nw¼, lot 1 of the ne¼; section 24, lots 1, 2, 3 and 4, n½, n½ of se¼, se¼ of se¼; section 25, lot 1; section 28, lot 1; section 29, lots 1, 2, 3 and 4, w½ of nw¼, se¼ of nw¼, sw¼, w½ of se¼; sections 30 to 32, inclusive; section 33, lots 1, 2, 3, 4 and 5, sw¼ of nw¼, w½ of sw¼, se¼ of sw¼.
T. 25 S., R. 15 E., section 3, lots 1, 2, 3, 4 and 5, w½ of sw¼, se¼ of sw¼; sections 4 to 9, inclusive; section 10, lot 1, w½ of ne¼, se¼ of ne¼, w½, se¼; section 11, lots 1, 2, and 3, w½ of sw¼, se¼ of sw¼; section 13, lots 1, 2, 3, 4 and 5, sw¼ of sw¼; section 14, lots 1 and 2, w½ of ne¼, w½, se¼; sections 15 to 23, inclusive; section 24, lots 1, 2, and 3, sw¼ of ne¼, w½ se¼; sections 25 to 36, inclusive.
T. 26 S., R. 15 E., sections 1 to 18, inclusive.
T. 18 S., R. 16 E., sections 29 to 32, inclusive.
T. 19 S., R. 16 E., section 7, w½; section 18, w½; section 19, w½; section 30, w½; section 31, all.
T. 20 S., R. 16 E., section 5, w½; sections 6 to 8, inclusive; section 9, sw¼; sections 16 to 21, inclusive; section 22, w½; sections 27 to 30 inclusive; section 31, ne¼; sections 32 and 33, all; section 34, w½.
T. 21 S., R. 16 E., section 3, n½; section 4, ne¼; section 18, s½; sections 19 to 20, all; section 27, sw¼; sections 28 to 33, inclusive; section 34, w½, se¼.
T. 22 S., R. 16 E..sections 3 to 11, 14 to 18, inclusive; sections 19 and 20, all; sections 22 and 23, all; section 24, s½; sections 25 to 30, inclusive; section 31, n½; sections 32 to 36, inclusive.
T. 23 S., R. 16 E., sections 1 to 4, inclusive; section 10, n½;sections 11 and 12, all; section 13, n½.
T. 24 S., R. 16 E., sections 19 and 21, all; sections 28 and 29, all; section 30, lots 1, 2, 3, 4, 5, 6, 7, 8 and 9, ne¼, n½ of se¼, se¼, se¼ of se¼; section 31, lot 1; section 32, lots 1, 2 3, 4 and 5, ne¼, ne¼ of nw¼, ne¼ of se¼; section 33, lot 1, n½, n½ of sw¼, n½ of sw¼, se¼ of sw¼.
T. 25 S., R. 16 E., section 4, lot 1; section 19, lots 1, 2, 3 and 4; section 28, lot 1; section 29, lots 1 and 2, sw¼ of sw¼; section 30, lots 1, 2, 3, 4, 5 and 6, sw¼ of ne¼, e½ of w½, se¼; section 31, all; section 32, lots 1 and 2, sw¼ of ne¼, w½, se¼; section 33, lots 1, 2, 3, 4, 5, 6 and 7, se¼ of ne¼, e½ of se¼.
T. 26 S., R. 16 E., sections 4 and 9, 16 and 18, inclusive.
T. 21 S., R. 17 E., sections 33 and 34, all; section 35, w½ of se¼.
T. 22 S., R. 17 E., section 1, w½, se¼; sections 2 and 3, all; section 4, e½; section 10, n½, se¼; sections, 11 and 12, all; section 13, n½, se¼; section 14, ne¼; section 30, w½, se¼; section 31, all; section 32, w½, se¼; section 33, sw¼.
T. 23 S., R. 17 E., section 2, sw¼; sections 3 to 11, inclusive; section 12, sw¼; sections 13 to 17, inclusive; section 18, n½, se¼; section 20, n½; sections 21 to 26, inclusive; section 27, n½, se¼; section 35, ne¼; section 36, all;
T. 29 S., R. 17 E., all of township.
T. 22 S., R. 18 E., section 7, all; section 8, w½, se¼;section 16, w½, se¼; sections 17 and 18, all; section 19, n½; sections 20 to 22, inclusive; section 25, sw¼; sections 26 to 28, inclusive; section 29, ne¼; section 33, ne¼; sections 34 to 36, inclusive.
T. 24 S., R. 18 E., sections 4 to 7, inclusive; section 9, all; section 10, w½, se¼; section 14, w½; sections 15 and 16, all; section 17, n½, se¼; section 21, n½, se¼; sections 22 and 23, all; section 24, sw¼; section 25, w½, se¼; sections 26 and 27, all; section 28, e½; sections 34 and 36, inclusive.
T. 23 S., R. 18 E., sections 1 and 2, all; section 3, ne¼; section 11, e½; sections 12 and 13, all; section 19, w½, se¼; section 24, n½, se¼; seetion 25, ne¼; section 29, w½, se¼; sections 30 to 32, inclusive.
T. 25 S., R. 18 E., section 1, w½ of nw¼, se¼ of nw¼, sw¼, sw¼ of se¼; section 2, all; section 3, e½; section 8, s½ of se¼; section 9, s½ of s½; section 10, e½ ofe½, s½ sw¼, sw¼ of se¼; section 11, all; section 12, w½ of ne¼, se¼ of ne¼, w½ se¼; sections 13 to 16, inclusive; section 17, e½, e½ of nw¼; section 20, lot 1; section 21, lots 1, 2, 3, 4, 5, 6, 7 and 8; section 22, lots 1, 2, 3, 4, 5, 6 and 7, ne¼; section 23, n½, n½ of s½; section 24, all; section 25, e½, ne¼, se¼, se¼ of se¼, lots 1 and 4 of nw¼; section 36, ne¼, n½ of lots 1 and 4.
T. 23 S., R. 19 E., section 6, w½; section 7, all; sections 18 and 19, all; section 20, w½; section 28, sw¼; sections 29 and 30, all; section 31, e½; sections 32 and 33, all; section 34, sw¼.
T. 24 S., R. 19 E., sections 3 and 4, all; section 5, n½, se¼; sections 9 and 10, 15 and 16, 21 and 22, all; section 26, sw¼; sections 27 and 28, all; section 33, n½, se¼; section 34, all; section 35, w½, se¼.
T. 25 S., R. 19 E., sections 1 and 2, all; section 3, e½, nw¼, n½ of sw¼, se¼ of sw¼; section 4, ne¼ of ne¼; section 7, sw¼ of sw¼; section 10, ne¼; section 11, n½ of sw¼, se¼ of sw¼, se¼, n½; sections 12 and 13, all; section 14, ne¼, ne¼ of nw¼, ne¼ of se¼; section 18, w½ of nw¼, se¼ of nw¼, sw¼, w½ of se¼; section 19, all; section 20, sw¼ of nw¼, w½ of sw¼, se¼ of sw¼; section 24, ne¼, e½ of nw¼, n½ of se¼, se¼ of se¼; section 25, ne¼ of ne¼; section 29, w½; sections 30 and 31, all; section 32, w½, w½ of se¼, se¼ of se¼.
T 26 S., R. 19 E., section 4, sw¼ of nw¼, sw¼; section 5, all; section 6, lots 1, 2, 3 and 4, s½ of ne½, se¼ of nw¼, n½ of se¼, se¼ of se¼; section 8, n½, ne¼ of sw¼, se¼; section 9, w½ of ne¼, se¼ of ne¼, w½, se¼; section 16, n½; section 17, ne¼ of ne¼.
T. 28 S., R. 19 E., section 12, se¼ of se½; section 13, e½ of ne¼, sw¼ of nw¼, sw¼, sw¼ of se¼, se¼; section 24, e½; section 25, lots, 1, 2, 7, 8 and 9.
T. 29 S., R. 19 E., section 23, se¼ of sw¼, se¼; section 24, sw¼, w½ of se¼, se¼ of se¼; section 25, all; section 26, e½, e½ of nw¼; section 35, ne¼ of ne¼; section 36, n½, n½ of se¼, se¼ of se¼.
T. 25 S., R. 20 E., section 6, ne¼ of nw¼, ne¼ of se¼; section 7, all; section 8, sw¼ of nw¼, w½ of sw¼, se¼ of sw¼; section 17, n½ of ne¼, n½ of e¼; sections 18 to 20, inclusive; section 21, w½ of nw¼, se¼ of nw¼, sw¼, w½ of se¼, se¼ of se¼; section 27, w½ of nw¼, se¼ of nw¼, sw¼, w½ of se¼; sections 28 and 29, all; section 30, n½, e½ of sw¼, se¼; section 31, e½ of ne¼; section 32, n½, n½ of sw¼, se¼ of sw¼, se¼; sections 33 and 34, all; section 35, w½ of nw¼, se¼ of nw¼, sw¼, w½ of se¼, se¼ of se¼.
T. 26 S., R. 20 E., section 1, s½ of nw¼, sw¼, sw¼ of se¼; sections 2 and 3, all; section 4, n½, n½ of sw¼, se¼ of sw¼, se¼; section 5, n½ of ne¼, se¼ of ne¼; section 9,

n½ of ne¼, se¼ of ne¼; sections 10 to 14, inclusive; section 15, ne¼, ne¼ of nw¼, ne¼ of se¼; section 23, ne¼, ne¼, ne¼ of nw¼, nw¼ of se¼; section 24, all; section 25, ne¼, ne¼ of nw¼.

T. 28 S., R. 20 E., section 7, s½ of s½; section 8, s½ of sw¼; section 15, sw¼, s½ of se¼; section 16, s½ of ne¼, w½, se¼; sections 17 to 22, inclusive; section 23, w½ of nw¼, se¼ of nw¼, sw¼, w½ of se¼, se¼, se¼ of se¼; section 25, w½ of nw¼, sw¼; sections 26 to 30, inclusive; section 31, lots 1, 2, 3, 6, 7, 8, 9 and 10; sections 32 to 33, inclusive; section 36, w½ of ne¼, w½, se¼.

T. 29 S., R. 20 E., sections 1 to 3, inclusive; section 4, n½, n½ of sw¼, se¼ of sw¼, se¼; section 9, ne¼, e½ of nw¼, e½ of se¼; sections 10 to 12, inclusive; section 13, n½, n½ of sw¼, se¼, sw¼, se¼; section 14, n½, n¼ of s½, sw¼ of sw¼; section 15, ne¼, n½ of nw¼, se¼ of nw¼ of sw¼, n½ of se¼, s½ of nw¼, ne¼ of sw¼; section 25, e½, ne¼ of nw¼, s½ of nw¼, n½ of sw¼, se¼ of sw¼; section 26, sw¼ of sw¼; section 27, sw¼, w½ of se¼, se¼ of se¼; section 28, s½ of nw¼, s½; section 29, s½ of ne¼, w¼, se¼; sections 30 to 36, inclusive.

T. 30 S., R. 20 E., sections 1 to 5, inclusive; section 6, ne¼, n½ of nw¼, se¼ of nw¼, n½ of se¼, se¼ of se¼; section 8, n½, ne¼ of sw¼, se¼; sections 9 to 16, inclusive; section 17, e½ of e½, nw¼ of ne¼; section 21, n½, n½ of sw¼, se¼ of sw¼, se¼; sections 22 to 26, inclusive; section 27, n½, n½ of sw¼, se¼ of sw¼, se¼; section 28, n½ of ne¼, se¼ of ne¼; section 28, n½ of ne¼, se¼ of ne¼; section 34, n½ of ne¼; section 35, n½, ne¼ of sw¼, se¼; section 36, all.

T. 31 S., R. 20 E., section 1, all; section 2, n½ of ne¼, se¼ of ne¼, ne¼ of se¼; section 12, all; section 13, ne¼, e½ of nw¼, n½ of se¼, se¼ of se¼; section 24, ne¼ of ne¼.

T. 26 S., R. 21 E., section 7, sw¼ of nw¼, w½ of sw¼, se¼ of sw¼; section 18, sw¼ of ne¼, w½, se¼; section 19, all; section 20, w½ of nw¼, sw¼, sw¼ of se¼; section 29, w½ of ne¼, se¼ of ne¼, w½, se¼; section 30, n½, n½ of sw¼, se¼ of sw¼, se¼; section 31, ne¼ of ne¼; section 32, n½.

T. 29 S., R. 21 E., section 4, sw¼, sw¼ of se¼; section 5, s½ of nw¼, s½; section 6, w½ of ne¼, se¼ of ne¼, w½, se¼; sections 7, 8 and 9, all; section 15, w½ of e½, se¼ of sw¼ of nw¼, ½ of sw¼, se¼ of sw½; section 15, w½ of e½, se¼ of se¼, w½; sections 16 to 22, inclusive; section 23, sw¼ of nw¼, sw¼, s½ of se¼; section 24, s½ of sw¼; sections 25 to 36, inclusive.

T. 30 S., R. 21 E., all of township.

T. 31 S., R. 21 E.,sections 1 to 13, inclusive; section 14, n½, n½ of sw¼, se¼ of sw¼, se¼; section 15, n½ of ne¼, se¼ of ne¼, sw¼ of nw¼, sw¼; section 16, ne¼, n½ of nw¼, se¼ of nw¼, sw¼ of sw¼; sections 17 and 18, all; section 19, n½, ne¼ of sw¼, se¼; sections 20 to 28, inclusive; section 29, n½, ne¼ of sw¼, se¼; section 30, ne¼ of ne¼; section 32, ne¼ of ne¼; section 33, n½, ne¼ of sw¼, se¼; sections 34 to 36, inclusive.

T. 32 S., R. 21 E., sections 1 and 2, all; section 3, ne¼, ne¼ of nw¼, ne¼ of se¼; section 11, ne¼, ne¼ of nw¼, ne¼ of se¼; section 12, all; section 13, ne¼, ne¼ of nw¼, ne¼ of se¼.

T. 29 S., R. 22 E., section 29, sw¼ of sw¼; section 30, s½ of nw¼, sw¼, w½ of se¼, se¼ of se¼; section 31, all;section 32, sw¼ of ne¼, w½, w½ of se¼, se¼ of se¼.

T. 30 S., R. 22 E., section 1, s½ of ne¼, s½; section 2, s½ of sw¼, se¼; section 3, sw¼, s½ of se¼; section 4, sw¼ of ne¼, w½ of nw¼, se¼ of nw¼, s½; sections 5 to 36, inclusive.

T. 31 S., R. 22 E., all of township.

T. 32 S., R. 22 E., sections 1 to 18, inclusive; section 19, ne¼, ne¼ of nw¼, n½ of se¼, se¼ of se¼; sections 20 to 28, inclusive; section 29, ne¼, n½ of nw¼, se¼ of nw¼, n½ of se¼, se¼ of se¼; section 33, ne¼, n½ of nw¼, se¼ of nw¼, n½ of se¼; sections 34 to 36, inclusive.

T. 29 S., R. 23 E., section 31, s½ of se¼; section 32, ne¼, se¼ of nw¼, s½; section 33, all; section 34, w½ of ne¼, se¼ of ne¼, w½, se¼; section 35, s½ of nw¼, s½; section 36, w½ of sw¼, se¼ of sw¼, sw¼ of se¼.

T. 30 S., R. 23 E., all of township.

T. 31 S., R. 23 E., all of township.

T. 32 S., R. 23 E., all of township.

T. 30 S., R. 24 E., section 6, s½ of nw¼, s½; section 7, all; section 8, w½ of ne¼, se¼ of ne¼, w½; section 9, sw¼, s½ of se¼; section 14, sw¼ of sw¼;section 15, w½ of nw¼,

T. 29 S., R. 23 E., section 31, s½ of se¼; section 32, s½, ne¼, se¼ of nw¼, s½; section 33, all; section 34, w½ of ne¼, se¼ of ne¼, w½, se¼; section 35, s½ of nw¼, s½; secsection 8, w½ of ne¼, se¼ of ne¼, w½; section 9, sw¼ of nw¼, sw¼, s½ of se¼; section 14, sw¼ of sw¼; section 15, w½ of nw¼, se¼ of nw¼, sw¼, n½ of se¼, se¼ of se¼; sections 16 to 22, inclusive; section 23, s½ of ne¼, w½, se¼; section 24, sw¼, s½ of se¼; sections 25 to 36, inclusive.

T. 31 S., R. 24 E., all of township.

T. 32 S., R. 24 E., all of township.

T. 30 S., R. 25 E., section 29, w½ of sw¼, se¼ of sw¼; section 30, sw¼ of ne¼, w½, se¼; section 31, all; section 32, w½ of ne¼, se¼ of ne¼ w½, se¼; Section 33, w½ of sw¼, se¼ of sw¼.

T. 31 S., R. 25 E., section 3, sw¼ of sw¼; section 4, w½ of ne¼, se¼ of ne¼, w½, se¼; Sections 5 to 9, inclusive; Section 10, w½ of w½, Section 15, nw¼ of nw¼; Section 16, n½, sw¼, n¼ of se¼; Sections 17 and 18, all; Section 19, n½, sw¼, n½ of se¼, sw¼ of se¼; Section 20, n½ of ne¼, nw¼; Section 30, w½; Section 31, w½ of se¼, w½, se¼; Section 32, sw¼ of sw¼.

T. 32 S., R. 25 E., Section 5, w½ of nw¼, se¼ of of nw¼, sw¼; Sections 6 and 7, all; Section 8,w½; Section 17, w½; Sections 18 and 19, all; Section 20, n½ of nw¼, sw¼ of nw¼, nw¼ of sw¼; Section 30, nw¼ of ne¼, nw¼, nw¼ of sw¼; section 31, sw¼ of nw¼, w½ of sw¼, se¼ of sw¼.

(San Bernardino Meridian, California.)

T. 10 N., R. 19 W., section 1, w½; sections 2 to 11, inclusive; section 12, w½; section 30, lots 1, 2, 3, 4, 5 and 6; section 31, lots 1, 2, 3, 4 and 5, w½ of ne¼, se¼ of ne¼, e½ of w½, se¼; section 32, lots 1, 2, 3 and 4, w½ of sw¼.

T. 10 N., R. 20 W., sections 1 to 12, inclusive; section 13, w½; sections 14 to 23, inclusive; section 24, lots 1, 2, 3, 4 and 5, w½; section 25, lot 1, w½ of ne¼, se¼ of ne¼, w½, se¼; sections 26 to 36, inclusive.

T. 11 N., R. 20 W., sections 19 to 36, inclusive.

T. 10 N., R. 20 W., sections 1 to 6, inclusive; section 7, lots 1, 2, 3, 4, 5 and 6, n½ of ne¼, ne¼ of nw¼; section 8, lots 1, 2, 3 and 4, n½; section 9, lots 1, 2, 9 and 10, n½, n½ of se¼; sections 10 to 15, inclusive; section 16, lots 1, 2, 3, 4, 5, 6,7 and 8, se¼, se¼ of sw¼; section 19, lot 1; section 20, lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 and 11; section 21, lots 1 and 2, ne¼, e½ of nw¼, s½; sections 22 to 29, inclusive; section 30, lots 1, 2, 3, 4, 5 and 6, s½ of ne¼, e½ of nw¼, se¼; sections 31 to 36, inclusive.

T 11 N., R. 21 W., all of township.

T. 12 N., R. 21, all of township.

T. 10 N., R. 22 W., section 1, lots 1, 2, 3, 4, 5, 6 and 7, s½ of ne¼, se¼ of nw¼, se¼; section 3, n½; section 4, n½; section 5, n½; section 6, n½; section 19, lots 1, 2, 3, 4, 5 and 6, e½ of sw¼, w½ of se¼, se¼ of se¼; section 20, lots 1, 2, 3 and 4, s½ of sw¼, sw¼ of se¼; section 21, lots 1, 2, 3 and 4; section 22, lot 1; section 25, lots 1, 2, 3 and 4, w½ of sw¼, se¼ of sw¼, ne¼ of se¼, s½ of se¼; section 26, lots 1, 2, 3 and 4, s½; section 27, lots 1 ,2, 3 and 4, s½ of n½, s½; sections 28 to 36, inclusive.

T. 11 N., R. 22 W., sections 1 to 5, inclusive; section 6, ne¼, ne¼ of nw¼, s½ of nw¼, s½; sections 7 to 36, inclusive.

T. 12 N., R. 22 W., sections 25 and 26, all; section 31, s½ of se¼; section 32, s½ of ne¼, s½; section 33, ne¼, s½ of nw¼, s½; sections 34 to 36, inclusive.

T. 10 N., R. 23 W., sections 1 to 11, inclusive; section 12, lots 1, 2, 3 and 4, nw¼ of ne¼, nw¼, n½ of sw¼ outside of private land grants; section 14, lots 1, 2 and 3, n½ of ne¼, sw¼ of ne¼, w½, nw¼ of se¼; sections 15 to 22, inclusive; section 23, lots 1, 2, 3 and 4, w½, s½ of se¼; section 24, lots 1, 2, 3, 4 and 5, s½ of s½; sections 25 to 36, inclusive.

T. 11 N., R. 23 W., section 1, se¼ of ne¼, s½ of sw¼, se¼; section 2, se¼ of se¼; section 3, w½ of ne¼, w½, nw¼ of se¼; sections 4 to 9, inclusive; section 10, sw¼ of ne¼, nw¼ of nw¼, ne¼ of sw¼, s½ of sw¼, se¼; section 11, ne¼, ne¼ of nw¼, s½ of nw¼, s½; sections 12 to 36, inclusive.

T. 12 N., R. 23 W., section 28, w½ of e½, w½; sections 29 to 32, inclusive; section 33, w½ of ne¼, se¼ of ne¼, nw¼, s½; section 34, w½ of sw¼, se¼ of sw¼.

T. 10 N., R. 24 W., sections 1 to 18, inclusive; section 19, lots 1 and 2, e½; sections 20 to 36, inclusive.

T. 11 N., R. 24 W., sections 1 to 30, inclusive; section 31, n½, e½ of sw¼, se¼; section 32 to 36, inclusive.

T. 14 N., R. 25 W., sections 1 to 5, inclusive; section 6, n½, ne¼ of sw¼, se¼; section 7, ne¼ of ne¼; section 8, n½, ne¼, ne¼ of sw¼, n½ of se¼, se¼ of se¼; sections 9 to 15, inclusive; section 16, ne¼, n½ of nw¼, se¼ of nw¼, n½ of se¼; section 22, ne¼, ne¼ o f nw¼, ne¼ of se¼; sections 23 and 24, all; section 25, n½, n½ of sw¼, se¼ of sw¼, se¼; section 26, n½ of ne¼, se¼ of ne¼, ne¼ of nw¼; section 36, n½ of ne¼, se¼ ofne¼.

T. 12 N., R. 25 W., all of township.

T. 11 N., R. 26 W., section 1, ne¼ of ne¼.

T. 12 N., R. 26 W., section 36 n½, ne¼ of sw¼, se¼.

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ORIGIN OF PETROLEUM---SIXTH PAPER

By PAUL W. PRUTZMAN of the California State Mining Bureau.

Having now shown, or attempted to show, that conditions exist beneath the surface suitable for the destructive distillation of organic matter, that ample supplies of such materials exist or have existed, and that the disposal of the carbonaceous residue offers no difficulty, the next step in our argument is to demonstrate that the destructive distillation of raw or fossilized vegetable matter would actually produce petroleum, and not a tar or other substance.

Direct proof is always the most convincing, but it may safely be said that no artificial process has produced or will ever produce a sample of petroleum; indeed, the very definition of the word "petroleum" forbids its artificial production. For petroleum is itself such a complicated and variable substance that, to cover all the various materials commonly embraced under that name, we are forced to define petroleum as a variable mixture of liquids, principally hydrocarbons, existing ready formed in nature. This definition, which is a paraphrase of that given by all writers on the subject, eliminates all such mixtures produced artificially.

Petroleum is an enormously complicated and extremely variable substance. It has no characteristic properties, except as we draw an arbitrary line between the liquid petroleums and the solid asphalts, which in practice merge by insensible graduations. Its color may be white, yellow, amber, orange, cherry or ruby red, green, olive, brown or black. It may be more limpid than water, or thick, viscid and sticky. It may boil at the temperature of a warm afternoon, or at little below a red heat, it may be lighter than sulphuric ether, or heavier than water, and its odor may be sweet, spirituous, aromatic, flat, oily or sulphurous. In short, there is no single physical property common to all petroleums, nor one found in any single sample which is not found also in some other substance not petroleum.

On the chemical side we are not much better off. The constituents of petroleum embrace almost all the known hydrocarbons, and most of the compounds of hydrogen and carbon with sulphur, nitrogen and oxygen. I do not know of any single substance found in any sample of petroleum which has not been found in other mixtures not petroleum, and thus we are left without any definite test, either physical or chemical, by which we could say with certainty, of a sample of unknown origin, that it is or is not petroleum, so that finally we are reduced to the natural or artificial origin of the sample as a means of classification.

Petroleum is characterized by consisting mainly of hydrocarbons, that is, bodies made up exclusively of the elements carbon and hydrogen, but this is true also of the class of bodies known as tars. Petroleum is also characterized by the fact that most of the hydrocarbons entering into its composition belong to the aliphatic or open-chain group, and this was for a long time supposed to distinguish petroleums as a class from the tars, as the tars which are produced in quantity in the arts, and are therefore the best known, consist largely of hydrocarbons of the aromatic or closed-chain group. But it is now known that many of the aromatic hydrocarbons exist in some if not all of the crude oils, and that many if not all of the open-chain hydrocarbons may be found in the tars.

My aim is to show, so far as may be, that the petroleums graduate insensibly into the tars, that no place can be found for a line between them, and that the preponderance of the aromatic group in the artificial tars, and of the aliphatic group in the natural tars (or petroleums) is due solely to differences in the conditions of distillation. In other words, that while we have never produced artificially a sample of tar identical with any known petroleum, we have approximated closely to this end, and have reason to suppose that we could, by destructive distillation of organic matter, exactly duplicate almost any sample of petroleum, could we duplicate the conditions under which it was formed.

The enormous number of known hydrocarbons (several thousand in all) is divided into seven principal families or series, and these in turn into two groups. It is impossible, within the limits set by a magazine article, to attempt even an outline of the chemical distinctions between the main groups and the seperate series, of the orderly arrangement of the individual members of each series, and of the regular development of the characteristic properties of each group as we pass from member to member. A very lucid exposition of this subject, which will fully repay the reading, may be found in Perkin & Kipping's little treatise on Organic Chemistry, or at more length in almost any work on this

subject. It is necessary, however, to name each series, its characteristic physical properties and the material in which it is found in most abundance.

The PARAFFIN SERIES is found in greatest quantity in Pennsylvania petroleums, and give to such oils the misleading name "paraffin base." The only reason in fact for such classification is that the paraffins preponderate in quantity in such oils, but not only do these oils contain a considerable proportion of hydrocarbons of other groups, but the paraffins are also found in all other petroleums, as well as in a great many substances not petroleum.

The paraffin series is a very large one, and contains hundreds of members, ranging in properties from gases, through light and volatile to heavy and viscid liquids, while the highest members in the scale are solids. All the members of this group, however, are characterized by an entire lack of color, a mild spirituous odor in the lighter members, and none at all in the heavier, a high boiling point joined to a low specific gravity, and a very high degree of chemical indifference, meaning by this, the ability to resist the action of chemical reagents, and of the air and light. All these properties are of value commercially, and make such oils as consist largely of paraffins very valuable to the refiner.

The OLEFIN SERIES is found in quantity in the heavier portions of Pennsylvania petroleum, and in California and many other oils. Oils consisting largely of the olefins are classed sometimes as "asphalt base," more often as "mixed base," the classification in any case being usually based on some such extraneous phenomenon as the presence or absence of solid asphalt in the crude, rather than on any knowledge of the chemical composition. It may be said that, while the term "paraffin base" has a certain warrant in partially describing the actual make-up of the oil, such a term as "asphalt base" has no meaning at all.

The olefin series is also a very large one, ranging from gases, through liquids to solids. The higher members of this series are found in quantity in the solid "paraffine" from our local oils. The solid members of the paraffin series crystalize readily, while those of the olefin series do not, and thus the "paraffine" from a few of our oils is of no commercial value.

The olefins are characterized by a lower boiling point and a higher specific gravity than the corresponding paraffins. They are much less stable, and while in a pure state are colorless and of pleasant odor, tend to darken when exposed to air and light, and as they are considerably subject to the action of the purifying chemicals used in refining, must be handled with care to avoid loss. This makes the refining of olefin petroleums a matter of difficulty. Probably a crude consisting entirely of the olefins would be of no commercial value for refining, but so far as I am aware no such crude is known. The olefins are found in some quantity in all oils, in most of the tars, and in many substances not petroleum.

The ACETYLENE and DI-OLEFIN SERIES are found in many tars, as well as in the crude distillation products of all petroleums. It is probable that they do not exist in crude petroleum before distilling, as they are so unstable that, even if formed during the process of production, they would soon pass into other substances and disappear.

On account of their instability, causing them to change their character during investigation, these bodies have been but little studied, and but few individual members have been described. It is probable that not many could exist, as the higher members would probably break down spontaneously. The individuals which we know are almost all bodies with a strong peculiar odor, many of them quite repulsive. When perfectly pure they are colorless, but darken very rapidly, finally changing to resinous substances of a brownish or black color. The darkening of the raw distillate from a petroleum still is largely due to the presence of these bodies, and the refining process consists principally in their removal. They are found in quantity in the tar from the Pintsch Gas process, and in fact wherever organic matter or petroleum is subjected to distillation at high temperatures.

These three series are the principal members of the Aliphatic or "open-chain" group of hydrocarbons. The principal series in the Aromatic or "closed-chain" group are as follows:

The POLY-METHYLENES or CYCLOPARAFFINS make up a considerable part of the bulk of many Russian and California oils. Less is known of this series than of the paraffins and olefins, and very little of the higher members, and I have not been able to find that any solid members have ever been described, while the lowest member is a liquid.

The hydrocarbons of this series have a much lower boiling point and higher specific gravity than the corresponding aliphatic compounds. They are quite stable in the air, and do not readily lose their natural white color, but are rather subject to the action of the purifying chemicals, and are therefore difficult to refine. Their odor is more aromatic or pungent, and less spirituous than that of the paraffins or olefins.

The BENZENE SERIES is a large one, but not so large as the paraffin series. As it occurs in great quantity in coal tar, these bodies have been thoroughly investigated, and while the hydrocarbons themselves are of little value or importance, their reaction products are very numerous and valuable.

The benzenes are mostly limpid liquids, though a few are solids; none are gaseous. They have a spicy, aromatic odor and a burning taste. All are perfectly white, and hold their color indefinitely against the action of the air, but they are readily acted on by chemicals, and are difficult to purify entirely. They are found in very small quantity in many petroleums, notably in our own oil, but in larger quantity in the tars from coal. As their boiling point is very low and their specific gravity very high, and because of their odor which, while pleasant, is very penetrating, they are very objectionable impurities in petroleum, and have been the greatest difficulty in the way of refining California oil.

The NAPTHALENES are found in tars produced at a high heat, but are not found in low-heat tars, nor have they ever been reported in petroleum. They are white solids, of great weight, while their methyl-addition products are colorless, heavy liquids. Being absent in petroleum, so far as known, they are of interest merely from the point of view that their presence or absence in tars formed at certain temperatures throws considerable light on the general principles of destructive distillation.

The ANTHRACENES are found in coal tars, but with two exceptions have never been found in petroleum. A specimen of oil from Brazil is reported to have yielded anthracene, and the writer separated a rather large sample from a California oil quite sufficient for identification by the usual anthraquinone test. Whether this was formed during distillation or was present in the crude I could never be sure, but as it distilled over at its normal boiling point, I always assumed its presence as such in the crude, remarkable as this would seem. Anthracene itself is a heavy, white, crystalline solid, and the other members of this group have similar properties.

The next (and final) paper will give the analyses, by groups of hydrocarbons, of several samples of petroleum, and of a number of tars, and will attempt to show such definite relation between the character of the product and the conditions of distillation as will warrant certain generalities as to the probable origin of petroleum, and as to its behavior when subjected to heat.

AUSTRIAN GOVERNMENT RESORTS TO OPPRESSIVE MEASURES TO CURB STANDARD OIL COMPANY'S DOMINATION.

The Austrian Government, not contented with former repressive measures which were aimed solely at the Standard Oil Company, has decreed that the number of the company's tanks on their station at the Boryslaw shall be reduced from twenty-one to three. The Vacuum Oil Company, one of the Standard's strong subsidiaries, against which repressive measures have constantly been taken by the Austrian Government, is now without oil for its refineries at Dziets and Almas-Fusito, and feeling is reported as running high against the company because it has bested competitors completely. The Government is now making a fresh endeavor to break the Standard's hold on the market, and it is stated that an effort is in progress which will limit the amount of kerosene to be sold by the Standard, so that it shall no longer be able to influence inland prices. Apparently this is the worst fight the great corporation has ever entered, as far as their chances for success are concerned. The officers of the Standard are reported disgusted at the methods pursued by the home companies in influencing their Government to such measures as have been taken, but it is a question if Austrians were not right in adopting the principle of "protection" now in force.

LONDON PETROLEUM COMPANY.

The operators of the London Petroleum Company on section 8, 28-28, in the extreme north end of the Kern River field, are meeting with more than ordinary encouragement, says the Oil World, and much interest is being manifested in the outcome. Drilling is now progressing between 790 and 800 feet in a very promising blue shale. If a producing well is brought in the territory will be extended more than a mile. The company was formed by U. S. Waugh and associates, most of whom reside in Los Angeles.

RECENT PATENTS.

The following patents recently granted of interest to the oil trade are reported expressly for the California Derrick by J. M. Nesbit, Patent Attorney, Park Building Pittsburgh, Pa., from whom printed copies may be procured for 15 cents each:

Thread protector, P. J. Shrum, Monaca, Pa., assignor to Colona Mfg. Co., Pittsburgh, 966,610.

Method of and apparatus for pumping oil wells, Andrew Sattler, Carpinteria, Cal., 966,772.

Gas controller, F. E. Youngs, Detroit, Mich., assignor to Equitable Meter Co., Pittsburgh, 968,021.

Adjuster for oil wells, L. C. Moore, Pittsburgh, assignor to Lee C. Moore & Co., Pittsburgh, 968,181.

Self bracing jack post, Wm. Sohrier, Sparta, Ill., 968,269.

Chain tongs, Philip Farrell, Flushing, N. Y., 968,335.

Gas separator for oil wells, L. W. Brown, Bakersfield, Cal., 968,534.

Refining petroleum, J. C. Black, Richmond, Cal., assignor to Standard Oil Co., 968,640.

Grapple, A. A. Phillips and Oscar Schelling, Los Angeles, Cal., 968,685.

Refining petroleum, C. I. Robinson, West New Brighton, N. Y., assignor to Standard Oil Co., 968,692.

Method and apparatus for cleaning oil wells, John Illy, Jamestown, N. Y., 968,851.

Well drilling machine, W. D. Deschamp and G. C. Jones, McAlester, Okla., 968,044.

PRODUCTION FOR JULY, 1910, IN DETAIL.

Field.	Wells producing.	Total production for month.
Kern River	1,567	1,290,685
McKittrick	168	499,785
Midway	233	911,639
Sunset	135	1,165,786
Coalinga	657	1,714,669
Watsonville	3	2,170
Arroyo Grande	2	700
Lompoc	16	52,700
Santa Maria	129	666,300
Summerland	141	6,100
Santa Paula	238	37,167
Newhall	70	15,864
Salt Lake	248	293,265
Los Angeles	418	37,584
Whittier-Coyote	140	87,026
Puente	53	3,300
Fullerton-Brea Canon	232	423,150
Totals	4,450	7,207,890

	Barrels.
Stocks, June 30, 1910	24,760,987
Production, July, 1910	7,207,890
	31,968,877
Consumption, July, 1910	5,542,908
Stocks, July 31, 1910	26,425,969
Average daily production	232,513
Average daily consumption	178,803
Average daily surplus	53,710

FIELD OPERATIONS DURING JULY, IN DETAIL.

Field.	Rigs comp.	Wells drg.	Wells comp.	Wells abd.
Kern River	30	54	22	..
McKittrick	11	28	2	1
Midway	60	227	28	1
Sunset	25	56	6	1
Coalinga	13	147	23	..
Watsonville	..	2	..	..
Arroyo Grande	..	4	..	..
Lompoc	..	11	1	..
Santa Maria	3	39	5	..
Summerland	..	1	..	..
Santa Paula	5	39	..	..
Newhall	..	8	1	..
Salt Lake	3	16	3	..
Los Angeles	..	..	..	..
Whittier-Coyote	1	16	1	2
Puente	..	2	1	..
Fullerton-Brea Canon	2	46	3	..
Salinas Valley	..	2	..	..
Totals	158	698	96	5

TRINIDAD BEING DEVELOPED FOR OIL.

The Consular Report from Trinidad says that both the British Government and independent American capital are doing their best to get a substantial supply of oil from the beds upon the island. It is stated that the British Government has both American and English experts working in its employ. The great reason for this movement is that England needs fuel oil for its navy.

DIVIDENDS FOR AUGUST, 1910.

Dividends listed on the San Francisco Stock Exchange for the month of August were in excess of $1,000,000. Los Angeles distributions will bring the entire dividend disbursements up close to one and one-half millions. This is a falling off from July, when close on to $2,000,000 was disbursed.

These sums are nearly twice as large as the amounts distributed at the same time last year, and the 1910 record will be the largest ever disbursed in the history of California oil:

1910.		
American Pet., com.	Aug. 1	$ 82,616.30
American Pet., pfd.	Aug. 1	11,873.85
Bay City	Aug. 15	10,000,00
Caribou	Aug. 15	20,175.75
Claremont	Aug. 23	10,000.00
Columbus	Aug. 25	9,992.62
Empire	Aug. 31	2,000.00
Euclid	Aug. 1	3,500.00
Home	Aug. 20	2,000.00
Kern River	Aug. 1	2,000.00
Linda Vista	Aug. 5	3,838.50
Mascot	Aug. 20	10,000.00
Mexican Pet.	Aug. 1	87,692.76
Monte Cristo	Aug. 23	50,000.00
New Penn.	Aug. 15	5,000.00
Palmer	Aug. 25	18,020.05
Paraffine	Aug. 15	3,000.00
Pinal	Aug. 31	11,992.00
Record	Aug. 15	7,500.00
S. F. & McKittrick	Aug. 1	15,000.00
Sauer Dough	Aug. 20	9,975.00
Section 25	Aug. 26	10,000.00
Sesnon	Aug. 3	7,000.00
Thirty-Three	Aug. 3	400,000.00
Union	Aug. 20	124,813.00
United	Aug. 20	40,375.50
West Coast pfd.	Aug. 21	20,616.00
Gypsy	Aug. 4	35,000.00
Mountain Girl	Aug. 4	7,000.00
Kern Oil	Aug. 17	45,935.12
		$1,069,917.45

Total dividends to date by companies listed on the San Francisco Stock Exchange, $34,682,082.

DIVIDEND NOTES.

The report that the Mascot Oil Company would distribute a two per cent dividend beginning with August first, and continuing from that date, as announced in the last issue of this magazine, was correct. Two per cent distributes $10,000 per month to the Mascot stockholders, where formerly they received $5,000.

The Mt. Diablo Oil Company has doubled its dividend to two per cent per month and will hereafter distribute about $10,000 monthly.

The two companies which smile under the presidency and guidance of Mr. E. L. Doheney, notably, the American Petroleum Co., and Mexican Petroleum, Ltd., disbursed the respective sums of $96,100 and $79,998 on September 1st.

The Amalgamated Oil Company paid its bi-monthly dividend on the first of the month. It amounted to $50,000.

The Premier Oil Company, which recently paid its fourth monthly dividend of one per cent, will hereafter pay quarterly. The Premier has sent out a circular letter containing the following: "On June 30 we had in storage over 150,000 barrels of oil; but the oil situation seems to be clearing up, and we look for oil to move much more freely in the next sixty days. We have completed our 14th well, which is No. 15. We are obliged to drill sixteen wells within eight years from October, 1907, and we have now only one more to drill, the derrick for this being already erected, which completes all our drilling according to agreement."

The Premier lease is considered one of the best 160 acres in the State, its fourteen wells making an average of 150 barrels a day each, and this production has been maintained from the start of operation.

The Twenty-Five Oil Company has just paid its sixth monthly dividend of $10,000, 25 cents per share. Comment is unnecessary.

The Gypsy Oil Company has declared a $35,000 dividend, paid at the rate of 17 cents per share. This is said to be money received from the Petroleum Land Syndicate, an English concern which recently took over the Gypsy's Midway property.

It is said that the Central will raise its dividend rate. Rumor so far unconfirmed.

STANDARD OIL'S EARNINGS AND DIVIDENDS—$710,000,000 DISBURSED SINCE 1882.

Probably the largest dividend payer in the world, the Standard Oil Company makes a wonderful showing.

Including the dividend to be paid in the last quarter of the year, the Standard Oil Company, from 1882 to 1910, inclusive, will have disbursed to shareholders nearly $710,000,000. Earnings for dividends, partly estimated, were close to $1,130,000,000 in the same period.

The following table shows net profits, dividends paid and surplus after dividends of Standard Oil Company from 1882 to 1910, inclusive, earnings for 1907, 1908, 1909 and 1910 being estimated:

Year.	Profits.	Dividends.	Surplus after divs.
1910	*$ 80,000,000	$ 39,335,320	$ 40,664,680
1909	*80,000,000	39,335,320	40,664,680
1908	*80,000,000	39,335,320	40,664,680
1907	*85,000,000	39,335,320	45,664,680
1906	83,122,251	39,335,320	43,780,931
1905	57,459,346	39,335,320	18,481,026
1904	61,670,110	35,188,266	26,481,844
1903	81,336,994	42,877,478	38,549,516
1902	64,613,363	43,851,956	20,761,407
Totals	$673,202,064	$357,929,620	$315,272,444
1882-01 incl'sve..	456,240,000	351,883,000	104,407,000
Totals	$1,129,442,064	$709,812,620	$419,679,444

*Estimated.

Although net profits available for dividends in the above table are given as $80,000,000 a year over the last several years, it is believed they have been much larger. Standard Oil Company today is doing the largest business in its history and earnings are large in consequence. Should the company decide to liquidate and sell its properties, shareholders would receive very close to the market value of the stock. Exclusive of its refineries, oil properties, tanks, steamships, railroads, pipe lines, etc., Standard Oil can report in the neighborhood of $500,000,000 of net liquid assets.

The quarterly dividend record of the great company during a series of years, is given below:

Year.	March.	June.	Sept.	Dec.	Totals.
1909	$15	$9	$6	$10	$40
1908	15	9	6	10	40
1907	15	9	6	10	40

1907	15	9	6	10	40
1905	15	9	6	10	40
1904	16	8	5	7	36
1903	20	7	5	12	44
1902	20	10	5	10	45

It is believed that there has never been another organization as perfect as the Standard's, and that no other field of investment has yielded more remarkable returns than the oil business, as shown by the dividends of the Standard.

EXPORTS, 1909-1910.

The exports of mineral oils from the United States for the month of July, 1910, as compared with July, 1909, are classified in gallons as follows:

	1909.	1910.
Crude petroleum	7,112,177	11,158,488
Naphtha	7,511,790	7,859,801
Illuminating	90,266,602	72,424,699
Lubricating and paraffine	12,716,669	12,692,134
Residuum	9,263,544	8,267,757
	126,870,782	112,402,879

The following ports have this year shipped as follows: Baltimore, 381,268 gallons; Boston and Charleston, 20,965 gallons; New York, 59,227,254 gallons; Philadelphia, 29,916,066 gallons; Galveston, 961,513 gallons; Sabine, 10,642,349 gallons; San Francisco, 11,253,464 gallons.

The San Francisco customs district leads the United States in quantity of exports of crude in fiscal year just closed, New York second in quantity and first in value.

San Francisco's increase over last previous year about 140 per cent of exports of crude. Exports of illuminants declined 30,085,913 gallons in amount and $1,299,996 in value in fiscal year; naphthas and lubricants increased, while residiuum shipments declined.

San Francisco's total exports of crude and refined oil 23,181,479 gallons less in amount than in previous year and $7,361,391 less in value.

STANDARD BUILDING RESERVOIRS AT KERN RIVER.

The Standard Oil Company is said to be rushing construction work on additional storage reservoirs on section one, in the Kern River field. Two of the reservoirs in question will hold half a million barrels of oil each when completed. Both of these new tanks will be cemented. The Standard already has 30 reservoirs, with a capacity of 17,000,000 barrels storage, besides seventy 35,000-barrel steel tanks. This is the largest oil storage farm in the world. In addition to this it has thirty-three 35,000-barrel steel tanks at San Pablo and one 330,000-barrel reservoir for storage at Point Richmond.

INDEPENDENT AGENCY LEASES FROM DOHENEY.

The Independent Oil Producers Agency has let approximately 575,000 barrels of oil tankage from the two Doheney corporations, the American Petroleum and American Oilfields Companies, as follows:

100,000 barrels of storage room at Coalinga.

275,000 barrels of storage room at Midway.

The latter is jointly used by the American Oilfields and the Agency.

Members of the Independent Producers Agency produced in all 2,500,000 barrels of oil in July, marketing 660,000 barrels at an average price of 38 cents per barrel.

PRODUCERS TRANSPORTATION COMPANY LEASES FROM STANDARD.

The Producers Transportation Company has secured a lease on one of the Standard's large Kern River reservoirs and is discharging light oil into it from the McKittrick field.

ARRANGEMENT MADE FOR LOANS ON OIL STORAGE CERTIFICATES.

On August 26th it was announced to the press that thirty-five cents had been determined upon as the minimum value of storage oil on which certificates will be issued by the Agency. This price is guaranteed to the holders of certificates by the Agency and the Union Oil Company. Besides this the holders of certificates will receive whatever price is obtained above this amount.

Certificates of the issue of September 15th will be for 3,000,000 barrels, approximately one-third of the present storage; each certificate being for 3,000 barrels, minimum value $1,050. These certificates will have attached 15 coupons, one payable each month for 15 months. They will also have a value of $1,000 net exclusive of interest, which will be paid at the rate of 8 per cent per year, this being based upon the minimum price at 35 cents a barrel. At the time this value had been decided upon, neither Associated nor Standard had announced their cut in prices at the well. The effect of such announcement is, of course, yet to be seen.

OIL STATION IN ALASKA.

The Associated Oil Company's steamer, "W. S. Porter," has sailed for Nome, Alaska, with 500 tons of pump and tank materials for use in erecting a 40,000-barrel fuel supply station to be used by an electric light plant in Nome. The vessel also carried a cargo of oil to St. Michaels, Alaska, from Monterey. It is said that this is the first oil shipment made from San Francisco to an Alaskan port.

ALASKA AN OIL COUNTRY.

A Vancouver press dispatch says:

"Competent authorities are predicting that some of the best-paying investments in oil fields on this continent will, within a few years, be in the farthest north territory of the United States. A party composed of oil and business men of Vancouver recently visited the Katalla and other oil-producing wells located on Katalla bay, an inlet of Controller bay, on the North Pacific, a distance of about 1,100 miles north of Puget Sound. The climate here is about the same as that of Southeastern Alaska, there being no extremes of heat or cold. The oil fields discovered cover an area of 150 miles, virtually all of which has been only superficially prospected. The party visiting the country saw many seepages along their route. An account of the wells visited follows: "The only pump rigged up at Katalla, well No. 1, pumped fifty-six barrels of oil in a two-hour test. The oil was of a very high grade. A certain gusher which was tested was found to flow of its own accord at the rate of thirty-five barrels per day. It is expected that this well would pump 500 barrels per day. Another gusher produced ten barrels an hour for fifteen hours. Oliver C. Runnels of Vancouver is reported to have said that all the wells on the 3,200-acre property of the Amalgamated Development Company were standing full of oil of a very fine quality which will produce a high percentage of lubricating oil, the highest qualities of gasoline and kerosene and other valuable by-products. He said: 'We went to see the oil seepages on Burls creek. Oil was seen everywhere, small rivulets of the fluid running out in every direction, many of them large enough to produce a barrel of oil a day.'"

CALIFORNIA DERRICK

The Oil Authority of the Pacific Coast.

Published Monthly

CHARLES C. WRIGHT, - - - Editor and Manager

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WAVE OF PROTEST SWEEPS OVER STATE—"LAWS MUST CHANGE," IS CRY.

The very unsatisfactory laws regulating the acquisition of petroleum bearing lands, the "conservation" of these lands by the United States Government, the unstable situation in which many oil companies find themselves as a result of recent conservation measures, the unfairness of the laws to the prospector and what is considered the unjust administration of the laws as especially evidenced by the Yard decision, in which a patent was refused, have stirred up such a furore and antagonism among oil men as has not been seen or felt in oil circles since the disturbance caused by the Pickett bill, and the whole Oil State is up in arms against present legal petroleum conditions.

At a meeting of oil men from all over the State held recently in Los Angeles, following upon a former meeting which met merely to crystallize sentiment, it was decided to form an association to be known as the "Western Oil Producers Association," which will act solely for the greatest common good of the oil producers of the State, to "protect the oil interests of California against unjust legislation, and to advance the market and general condition of the industry." This association formulated by-laws which were signed by all members, who, upon the fourth of the month, numbered almost one hundred. Twenty-two men from the various oil districts were nominated as candidates for the election to the board of directors of the association. Among those nominated were: W. W. Orcutt, S. A. Gulberson, Jr., T. A. O'Donnell, John Barneson, M. H. Whittier, Julius Fried, John Lawson, Fred W. Hall, H. B. Guthrie, Dr. Norman Bridge, J. F. Lucey, J. M. Danziger, William Loftus, S. C. Graham, John Baker, Jr., I. E. Segur and J. B. Gordon.

The spirit of the association was not at all unanimous, some wishing the laws to be entirely changed, others desiring only a few changes, some thinking that Los Angeles was not the proper place for such a meeting, believing that Bakersfield, as the logical center of the petroleum industry, should have it, others contending that matters should be settled there, and wishing to determine a policy which they should present to the Mining Congress, which convenes in Los Angeles the latter part of this month, for that body to take up and work for in Congress. During the meeting a number of telegrams were received from very prominent oil men who happened to be in San Francisco, requesting that action be deferred until the meeting should be more representative. As far as can be learned from press dispatches the meeting represented chaos more than anything else, unanimity being secured upon no one subject except the general one that "conditions should be bettered."

Of much more benefit to the industry and to those who feel that their property rights are jeopardized was the meeting held in Bakersfield, on September 4th, at which fully one hundred men were present and which resulted in the formation of an entirely new organization which goes under the name of the "California Oil Men." The purpose of this new body is to "devise plans and take action for the relief of the operators on public oil lands whose property is threatened by adverse decisions of the General Land Office." This meeting was surprisingly unanimous, in comparison with that held in Los Angeles; which latter was, by the way, not even mentioned during the entire time proceedings were in progress.

Chas. P. Fox of the California Oil World was elected chairman of the meeting and was authorized to appoint a committee of three members from each of the ten oilfields of the State to formulate plans for permanent organization and to outline a course of action and take the initial steps towards effecting same. General R. L. Peeler of Coalinga, who was chosen Secretary of the meeting, and Chas. P. Fox, were made members of the committee which Fox appointed. The membership roll was signed by seventy-seven prominent oil men. The committee appointed by Fox, as far as given out, is as follows:

Coalinga, S. A. Guiberson, Jr., R. W. Dallas and George D. Roberts; Maricopa, O. O. McReynolds, I. E. Seegur and Matt Sullivan; McKittrick, F. N. Scofield, H. B. Guthrey and E. J. Miley; Santa Maria, George L. Walker, P. O. Tietson and W. W. Orcutt; Ventura, G. S. Johnson; Devil's Den, F. J. Walker, J. H. McGlashan and J. W. McCord; Kern River, O. C. Heck, J. M. Wright and W. D. Young; Midway, E. M. Sheridan, S. A. Johnson and J. B. Hedrick.

Fox said he would announce the members from the Fullerton-Whittier and Salt Lake fields in a couple of days.

The Los Angeles Chamber of Mines & Oil sent delegates to the Bakersfield convention, with the idea in mind that the Law Committee of the Chamber might take an active part in the working out of the legislative program, which will be prepared to the satisfaction of the majority of oil men for submission to Congress. H. B. Guthrey was one of the Los Angelenans at the meeting. He gave his views to a press representative as follows:

"I suggest that an oil organization comprising all the fields of the State be formed.

"I am opposed to the leasing of oil lands by the National Government.

"I am opposed to the selling of oil lands to the highest bidder.

"I favor a fair location law which will protect legitimate operators and guarantee title to a limited acreage after valid discovery has been made.

"I think that 'conservation' is principally a political issue and has no important bearing upon the oil question in the Western States."

The members of the County Board of Trade gave expression to their views in no uncertain language, going on record with the following resolution:

"Resolved, That we are opposed to any system of leasing of oil land by the Government, as experience in this line has proven it to be a certain means of turning the control of these resources over to large aggregations of capital. That with two slight amendments to the present law, rights of all fair minded men will be protected and justice and equity meted out to all.

"The first should provide that all locations must be recorded in the general land office, and when so recorded, no other location can be placed upon that land, until it is proven by process of law that the first location is null and void because of non-compliance by claimant with the requirements of the Government. The second should limit the acreage that could be taken by any one man and provide a heavy fine and imprisonment for any violation of this provision.

"And it is believed at this time it is fitting and proper that we should express our conviction that any citizen of

the United States, who prior to the legal withdrawal of July 3, 1910, was engaged in acquiring title to oil lands under the laws of the land and the decisions of the courts, should be protected in his rights and patents issued to those who have earned them by faithful compliance with all such requirements."

W. W. Orcutt, expert geologist for the Union Oil Company, had the following to say in regard to his views upon changing the laws:

"I consider the present laws are good enough with a few slight modifications. For instance, I would suggest that the Interior Department rule, as it can rule under the present law, that no discovery is necessary before location. Under the Yard decision a great hardship is worked upon the prospectors who have no money to go ahead and, therefore, have to organize companies for development. When a company or corporation is formed it is absolutely essential that it have full title to property upon which it is to drill. If it cannot have this it will be a very difficult matter to do any business."

As we go to press we are informed that the greatest harmony prevails among the members of the new association and that a policy satisfactory to all will probably be decided upon within the near future.

A CUT IN PRICE.

The Associated and Standard Oil Companies, both of which have fought long and vigorously to bear the market, have announced a price of thirty cents per barrel for oil at the wells. This is said to be a cut of exactly two-fifths the price paid until September 1st. It came, to the average independent producer who was selling to the big concerns on daily runs, like a bolt out of a clear sky.

Simultaneously with the announcement of the new price which the great marketers *offer*, and which most of the companies selling on daily runs are *said* to have accepted, came the report, published first, we believe in the *Oil World*, that the Associated had made a reduction of ten cents per barrel upon its former price to consumers; that the company had contracted to supply the Spreckles steamships at San Francisco with oil at eighty cents per barrel. The announcement is of the utmost significance. Virtually, it is an acknowledgment by the Associated Oil Company that while they *offered* only thirty cents at the well, they expect that they will not be able to get as much oil as they wish at that figure. For that reason they cover their loss on the reduction to the *consumer* by making that reduction but one-half the price-cut per barrel on oil at the well. In other words, they reduce *ten cents* to long-term contract consumers and *offer twenty cents less to the producer*. Such being the case, they are fully protected even if they pay ten cents per barrel more than they announce they will pay; the cut comes out of the producers pocket.

The Associated has been buying producing properties very heavily, of late. Ever since their annual report was published, showing that bad faith had been intended, or exceptionally poor judgment was displayed by the management, Associated stock has declined steadily. At last reports only $40.37 was offered; six weeks ago Associated was selling for more than $50.00. It is our belief that this fall in price was largely due to the fact that the press of California united in denouncing the report as giving a false idea of the company's possessions. The company, which has for a long time been borrowing from the Standard Oil Company, according to well authenticated reports, has been short no less than 20,000 barrels of oil every day. This in face of the huge production which members of the Independent Agency have been obtaining. Something had to be done. There were rumors of a contract pending between the Agency and the Associated which would completely do away with the surplus of the former companies. It was known that the Agency had more oil on its hands than it could handle, and it was generally surmised that the Associated could use the oil to very good advantage; but it was also known that the Associated could continue to borrow from the Standard and that, with the Producers in a position where they would be pleased to dispose of their large supply at a reduction, perhaps, the Associated would ask a price which the Producers would not care to accept; and that pending arrangements for acceptance or non-acceptance the Associated could do its worst to reduce prices generally. It is said, and, incidentally, denied, that the proposition was submitted—and turned down. Associated, having acquired some new properties, then resorted to a new move—the cut. Same was followed by the Standard. Which is the situation—for the *present* only—in a nutshell.

We cannot see that oil can be kept down for any length of time to the low price of 30c per barrel, even if there were 50,000,000 barrels in storage, instead of but half of that amount. Oil is too absolutely an economic necessity for it to remain at that price when coal sells at anywhere near its present figure. The only trouble is that at the present time there is supposed to be a surplus; and this surplus, which would not last five consecutive months, must be done away with, according to the rules of the game, as it has heretofore been played, before the producer will get the real value of his product. The market for crude oil is today vaster than at any previous time, and it is growing steadily. From present indications California crude oil will in all probability be required within the next few years to run both Atlantic and Pacific ocean liners. The Standard Oil Company, it is announced, is even now inducing the British manufacturing houses to change their fuel from coal to oil. It is said that the Standard is even contemplating a number of pipe lines from coast points to interior cities of the British Isles. The greatest navy of the world, notably the British navy, is experimenting with oil and will change all its battleships from coal consumers to internal-combustion, oil propelled war vessels. A huge market is now in the building; but a great market, right here, is absolutely at the mercy of the producer, and for that reason we cannot see how oil can remain at 30c per barrel at the well, when it is the sole fuel for western railroads and manufacturing concerns.

Dividends will continue to pour from the oil industry, whether there has been a temporary reduction in price at well or not. It is a noticeable fact that the Union Oil Company, which has supported the Independent Producers Agency, has made no public announcement in regard to their price at the well. It will, however, be peculiar if the management of the Union does not reduce its price at the well, in view of the fact that the other great marketers have done so.

It was said that there had been formed, among consumers, a "conspiracy" to bear the prices. Such may be the case. They naturally welcome any reduction, since they are really the persons from whom the money eventually is obtained; but it is doubtful if such a thing as a conspiracy ever entered their heads. They are too pleased to be able to get fuel at so cheap a rate as oil is sold, to conspire against the industry.

The industry is not toppling; it is not even unsteady; there is no reason to fear further reductions; for oil is bound to come up in price in the near future.

It is said that several large operators continue the acquisition of large tracts of Government land in the Buena Vista Hills and Elk Ridge country, paralleling the Midway oil field. In the face of the Minzer decision it is considered as extra hazardous to purchase locators rights at the present time.

ANOTHER VIEW OF THE OIL "SITUATION"

(By the Derrick's own Cartoonist)

The Associated OFFERS 30c per barrel for Oil; the Standard meets the Cut—but the Independent Producer views the cut with suspicion.

LAND SALES OF RECENT DATE

UNITED OIL CO. BUYS IN MIDWAY.
ASSOCIATED CONTINUES PURCHASING.

The Associated purchased 80 acres on the same section as the United's big buy almost simultaneously with that transfer. The land, which is the S. ½ of the S. W. ¼ of section 28, 31-23, borders on the California Midway, Mays, January and July properties, and is said to have brought a good, stiff price.

A far greater purchase than this, which the Associated made the latter part of August, is that transfering section 2, 32-23, Midway, from M. J. Laymance and associates to the big marketer. The price received in this transaction is unknown, but it is believed that part payment was taken in Associated bonds. It is said that the United was a keen competitor of the Associated for this purchase.

In connection with the above transfer was the sale by W. R. McMurtry of the N. ½ of the N. ½ and the S. ½ of the S. ½ of section 20, 31-23, 320 acres, price not given out.

The total land purchases of the Associated in this region during the last two weeks amounts to 1040 acres, upon which a very conservative valuation would be $1,500,000. Associated has installed an air compressor upon their "Giant" lease in McKittrick.

ANOTHER ASSOCIATED PURCHASE.

A Los Angeles publication gives the statement that the Associated Oil Company has purchased the "Tormey" tract of 600 acres at Avon, and will erect a refininery upon the land. Story unsubstantiated and as yet not denied.

UNITED OIL COMPANY BUYS IN MIDWAY.

M. J. Laymance and associates of San Francisco have sold 320 acres of land in section 20, 31-23, Midway, for $500,000. The United will start immediate development of the property, which is well known for the enormous gas well there which recently became uncontrollable but has been capped again. United owns 20 acres on section 6, 32-23; 20 acres on section 24, 31-22; and other properties. It has a monthly production in excess of 30,000 barrels of oil and has paid five substantial dividends.

PRINCESS SECURES TUNNEL RANCH IN TEPUSQUET CANYON.

The Princess Oil Company has purchased the N. ½ of the Tunnell Bros.' property in Tepusquet Canyon, Santa Maria, through John H. Conway, for a price not made public. The company will commence drilling on the 20th instant.

SLOCUM BROTHERS LEASE TO BRITISH IN SANTA PAULA CANYON.

It has been given out that an English syndicate has purchased or leased 1,120 acres in Santa Paula Canyon and that a first payment has been made to cement the contract. Neither the amount of the first payment nor the terms for which the property has been sold or leased, whichever has been done with it, has been made known. Reports are meager, and it is doubtful if English capital is, as stated, behind the deal. Some people are inclined to think that the transfer was financed by local capital. The property comprises all of section 3, and parts of sections 4 and 9, and it adjoins the Cortelyou holdings.

UNION TO TAKE OVER BARNADON.

The Union Oil Company is making arrangements to take over the interests of the Barnadon Oil Company in section 24, 32-23, which is just south of Taft. The latter company erected five rigs, one of which is now drilling, and the four remaining are almost ready to start work. The terms of the deal are not publicly known.

SANTA MARIA-MIDWAY LEASES IN TEPUSQUET.

The Santa Maria-Midway Oil Company has leased 320 acres of land on the Ontiveros tract; price unstated. The officers of the Santa Maria-Midway Company are: President, A. H. Beach; Vice-President, J. M. Speese; Sec'y and Treas., J. L. Kleinpeter. P. D. Olivera and S. F. McFarlane complete the directorate.

HEALY TRACT LEASED.

The Healy tract adjoining the Associated Williams place in upper Cat Canyon is said to have been leased to a syndicate of English investors for oil development. This property is in the proven belt and comprises over 130 acres. Considerable demand has made it an objective for several leasers and it is understood to have brought a good figure.

GETS LEASE IN VENTURA.

W. T. Fuller of Mississippi, operating in conjunction with the Brunton Company, has taken an option on a lease on 520 acres owned by the Silver Falls Oil Company lying just north of the Big Sespe property in Big Sespe Canyon, and expects to have drilling started within the next thirty days.

No wells have ever been drilled on this land, although a derrick is up. It is, however, within 200 feet of the Big Sespe's work.

A dispatch August 31st, from Los Angeles says: "Col. John H. Galey, who is here from Texas and Louisiana fields, has leased between 400 and 500 acres on sections 14 and 15 in 10-23 San Emedio extension of Sunset. There is a rig on the property which has drilled to about 200 feet. This district, which lies directly west of San Emedio ranch, is one that gives indications of light oil and Col. Galey has said very plainly that he does not want anything but light oil.

OIL STRUCK AT PETALUMA IN PAYING QUANTITIES.

The Consolidated Oilfields of California, Ltd., a British corporation floated by J. W. Frank of San Francisco, formerly of Red Bluff, California, has struck oil about four miles out of Petaluma on the "Andy Ducker" ranch at a depth of 675 feet in well No. 2. Their well No. 1 turned out a gas well which is flowing at the present time at the rate of about 1,000,000 cubic feet per day, according to credible authority. The well is generally said to be good for about 250 barrels of oil per day, if not more, and the product is of a good grade, testing 18 degrees gravity, Beaume, according to Mr. Frank, who is a well known civil and mining engineer. The oil is free from sand and sediment. All lands in the vicinity have taken a rocket-like rise in value, but most of the land which is thought to be petroleum bearing has been secured by the syndicate which brought in the well, Mr. Frank being too far-sighted a man not to have attended to the matter of leasing long before the news of a well became known. Development will be continued.

LAGUNA RANCHO, IN FOXEN CANYON, SOLD.

The Laguna Rancho, consisting of 4,500 acres located at the head of Foxen Canyon, Santa Maria, is reported upon creditable authority, to have been purchased from the Bishop Estate Company. No particulars given. The property is presumably both oil and asphalt bearing, as it is within a half mile of the old Alcatraz asphalt refinery on the Sisquoc ranch, closed down some years ago by the trust. The land will be developed.

ELK HILLS SECTION SOLD.

Section 30, 30-23, in the Elk Hills has been sold to the Redlands Oil Company by Bakersfield men. The new company will develop immediately. There are already four rigs, a bunkhouse and other buildings upon the property. Ralph Arnold is consulting engineer for the Redlands Oil Company, which, as might be inferred, is financed largely by Redlands people.

CONCERNING LIQUID FUEL.

The weight of and the space occupied by propelling machinery being less for gas or oil motors than for steam engines, it follows that a vessel of less displacement will suffice to carry the same cargo. Moreover, says Mr. R. M. Neilson, in *Cassier's Magazine*, owing to the greater efficiency obtained by adopting the internal combustion principle, a less weight of fuel will suffice for a voyage of given duration. Both these statements apply in all cases, but in vessels making short voyages, and in which the weight of fuel carried is small, the second consideration is of little moment. For long voyages, however, without refueling the bunker or tank capacity can be very much reduced for gas or oil motors, and greater economy in displacement can therefore be effected in long-voyage than in short-voyage vessels. Short voyages will be more usual for the size of cargo boats considered. If for a vessel of, say, 4,000 tons displacement and 1,000 indicated horse-power, 100 tons weight could be saved in machinery and fuel by adopting gas engines and producers with coal fuel, or oil engines using heavy oil fuel in place of reciprocating steam engines with boilers burning coal or oil, the displacement of the vessel could be reduced probably by a little more than 100 tons.

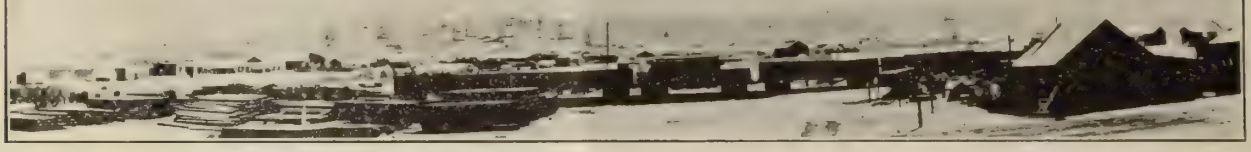
NEW PAPER FOR SOUTHERN OILFIELD.

In its first issue *The Southern Oil and Gas Journal*, published at Shreveport, La., under the management of D. E. Brundage, has brought out an excellent new oil publication. *The Southern Oil and Gas Journal* is spokesman for the operators of the Caddo oilfield, which has steadily assumed greater importance among the Gulf oil producing districts.

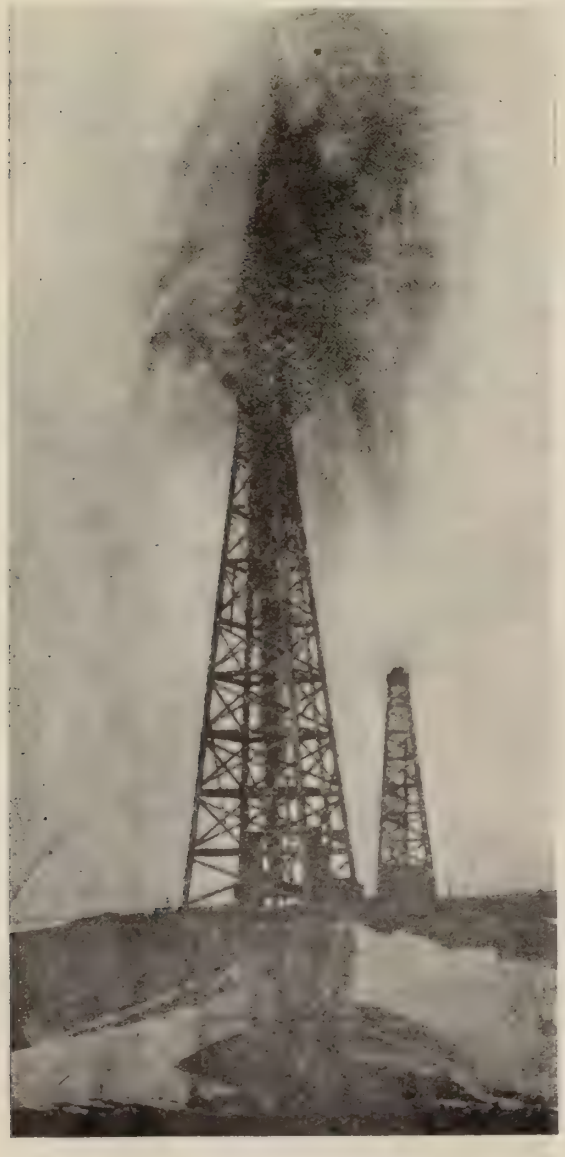
We extend our hearty and sincere wishes for success to the new paper. After such a creditable performance as the first issue, we believe that the management will not have great difficulty in enlisting the support of all the live operators in their district.

Eagle Creek's gusher on section 31, 31-23, Midway, has been brought under complete control and is now allowed to produce no more than 700 barrels daily. Well No. 2 is producing about 400 barrels on the beam.

SUNSET-MIDWAY-McKITTRICK



MIDWAY'S SECOND LAKEVIEW



The American Oilfields Co.'s Well No. 79
Flowing in the Neighborhood of 25,000 Barrels of Oil per Day

AMERICAN OILFIELDS CO.

Mr. Doheney's $25,000,000 company, the American Oilfields, has 600,000 barrels of oil in storage in tanks, and 500,000 barrels in reservoirs at the present time. The company has ordered eight more 55,000-barrels tanks and is evidently preparing to care for its production in the very best possible manner. In addition, the American Oilfields is building an ice plant, an electric light plant and three boiler plants.

HONOLULU OIL COMPANY GETS TWO FINE PRODUCERS.

The Hawaiian Oil Company, owned by the Honolulu Oil Company, has a big producer on section 31-31-23, which just came in. Superintendent Pollard of the Honolulu estimates the flow of the big spouter at 10,000 barrels daily, says the Midway Driller. This well was finished about a year ago, but it did not yield a satisfactory amount of oil. It was drilled deeper for the lower and richer sand. This was struck and the well finished at 2,200 feet. After the perforating was completed a big flow resulted. The gravity is 24. The well is under control.

On Wednesday, August last, a good well of high gravity oil was brought in by the Honolulu Oil Company on section 4-32-24. After flowing at a 1,000-barrel rate, the well partly sanded up. The work of cleaning it out is under way and a fine well is expected when the sand trouble has been overcome.

PREHISTORIC LOG FOUND BY DRILL.

When drilling well No. 25, the Twenty-Five Oil Company recently drilled through a petrified log at 500 feet depth. The log was part of a tropical tree, showing a fine grained, very hard wood, say those who have seen it. Some pieces were sent to the State fair to be placed upon exhibition. Midway produces some remarkably interesting materials for geologists to work upon.

EAST MIDWAY GETS HEAVY GAS FLOW.

The East Midway Oil Company, operating on section 2, 31-24, in the Elk Hills, has struck a heavy flow of gas at the shallow depth of 348 feet. The pressure is so strong that the workmen were driven from the derrick. The company is elated at what they consider the excellent chances for bringing in a large well at a shallow depth.

EIGHT GUSHERS AT ONCE.

The last week in August saw eight gushers in operation in the Midway, all at the same time. They were: Lakeview gusher, 17,000 barrels per day; American Oilfields, No. 79, 30,000 barrels; American Oilfields No. 68, 5,000-6,000 barrels; Santa Fe's gusher, 5,000-6,000 barrels; Consolidated Midway (under control), 10,000 barrels; Midway Northern, M and T, and Honolulu Consolidated completing the list with respectively large productions.

ADMIRAL ROBLEY D. EVANS VISITS WEST SIDE OIL-FIELDS.

(Special).—Admiral Robley D. Evans, United States Navy, retired, and a party of Eastern and California capitalists, arrived in Bakersfield on the 7th inst., on a visit to the Kern County oil fields. Evans went directly to the Southern Hotel and declined to be interviewed. It is said his visit here is on purely private business, as he is interested to some extent at Midway and Maricopa.

In the Evans party are N. F. Wilson and R. P. Boyer of San Francisco, president and vice-president of the Lincoln Mortgage and Loan Co.; Theodore P. Gilman, formerly State Controller of New York; R. L. Dunn and J. A. Cruikshank of New York, and D. S. MacInnes of London, England.

They were joined by Colonel Timothy Spellacy, John D. Thompson, former Mayor M. P. Snyder, Colonel J. B. Lankershim, John W. Mitchell, Hubert T. Moore, all of Los Angeles. The party will visit the West Side oil fields. It is said the purchase of a large section of oil land is in the wind, but it could not be confirmed tonight.

The Honolulu Oil Company will pipe gas from its Buena Vista Hills property to Taft for fuel and domestic purposes. The gas mains are now being laid out. The Honolulu has enough gas from its big gasers to supply fuel for drilling purposes to surrounding properties in the field. The prediction made in the March issue of the *California Derrick* has already come to pass.

MIDWAY NORTHERN.

The Midway Northern, which recently brought in a big gusher in the Midway "Flat," has two 1,000-barrel steel tanks and a 30,000-barrel reservoir with 10,000 barrels of oil in it. The well is under control, and the management has contracted the oil to the New Central and Anaconda Oil Companies for 47½ cents per barrel net. Two railroads and a small refinery are supplied by the purchasing company.

The May's Oil Company's well in North Midway is said to have been making close to 2,000 barrels per day ever since July 4th. May's oil goes to the Standard Oil Company.

YANCEY DRILLING.

J. C. Yancey is drilling on the N. W. ¼ of section 4, 31-22, Midway; he is also drilling in the S. E. ¼ of the same section. The wells are close to the "Coin."

RUBY INCREASES PRODUCTION.

The Ruby has raised the production of its well No. 4, from 5 to 125 barrels per day, by deepening. The well was formerly 1,200 feet in depth. It is now down 1,425 feet. A solid body of oil sand was struck.

STANDARD BUYS CONS. MIDWAY OUTPUT.

The Standard Oil Company has contracted for the output of the Consolidated Midway's gusher on fractional section 30 in the Maricopa field, up to 10,000 barrels a day, and will at once lay a pipe line to the well. This information was given to a contemporary by J. M. Danziger, one of the directors, and confirmed by Field Superintendent E. A. Wiltsee. Neither would state the price. Mr. Evans, a Standard Oil employe has been installed by the Consolidated Midway in the capacity of Superintendent of Production and will have entire charge of the output of the well. Within thirty days the company expects to be delivering the maximum of 10,000 barrels daily. No quantity contract has been made, the Standard taking oil on daily runs at the price agreed upon. The Consolidated Midway had no contract with any firm and started out to sell direct to the producer. They had the production and couldn't be scared out, and it is generally conceded that they got a good stiff price in their contract.

Well No. 2 of the La Blanc has passed through thirty-five feet of live oil sand into a second sand with a heavy gas pressure, which blew the tools out of the hole. The well is 2,200 feet deep and is now being equipped with a packer, after which it is expected to flow. Well No. 3 is down between 900 and 1,000 feet. The 10-inch string has been stuck twice and operations have been suspended until the circulator can be put in. Mr. La Blanc wants to carry the 10-inch down to 1,500 or 1,600 feet if possible.

The La Blanc has sixty acres in the south half of the northwest quarter of section 6, 12-23.

The Union's Regal well is said to be a very large producer. It is under perfect control.

LADY WASHINGTON SHUTTING OFF WATER.

MARICOPA, Cal., September 8.—Well No. 1 of the Lady Washington Oil Company encountered a heavy water stratum at about 1,710 feet recently. The gas pressure was so strong that it caused the water to spurt up well above the top of the casing and gave rise to the rumor that it was an artesian flow. This rumor seems to be entirely unsupported by the facts. The eight-inch casing has been carried down 200 feet through the water-bearing sand, and present indications cause the drillers to believe that the bit is about to enter a shale. The drillers anticipate no difficulty whatever in shutting off the water, and it is their belief that the large oil sands will be encountered at about 2,300 feet.

Both gas and oil are in evidence all the time. The gas pressure is so strong that it causes the water to foam as it rises over the casing. This same water stratum has been encountered by a number of large wells throughout the territory, and if those wells are anything to go by, it is said, the Lady Washington well No. 1 should come in a big producer. Well No. 2 of the same company is flowing a steady stream of oil all the time. This well has not yet been completed, and will be finished deeper in order to secure a large flow, if that is possible. The officers of the company, who express confidence that large wells will be secured in both No. 1 and No. 2, were surprised by an article which appeared recently in a leading oil publication. This article stated that the Johnson, the Yellowstone, on section 7, and the "Old Lady Washington," on section 6, have been standing for several months with no attempt to shut off the water. This statement is characterized by the officials of the company as gross misrepresentation. The water in both wells to which the article referred was shut off a long time ago, and there has been no difficulty in controlling the water until the big stratum was encountered in well No. 1. This water is being taken care of as expeditiously as any company could take care of it. While there is still considerable water flowing, it is practically certain that the carrying down of the eight-inch pipe will effectually shut the water off, as the flow at the present time is almost nothing compared to what it was at first.

World's Largest Oil Storage Tanks Unde

MR. JOHN J. HOWARTH

Assistant Superintendent of the work, in charge on the field

Mr. Howarth is a widely known young engineer of great ability, He was formerly with the Great Western Power Co.

The largest reinforced concrete oil storage tanks in the world are now being rushed to completion by the Union Oil Company of California, at San Luis Obispo, on the ground recently acquired there by the Producers Transportation Company. Surveying was begun about the 28th of July, and the work is expected to be completed by the 28th of October, giving the contractors, Weber-Duller Company, of Los Angeles, only about ninety days in which to accomplish the largest concrete oil tank construction work ever undertaken. The contract is under the especial supervision of Mr. Thos. Englehart, General Superintendent of the Company. John J. Howarth, a widely known engineer, formerly with the Great Western Power Company, is Assistant Superintendent of the work, and is in charge on the field. Mr. John Potts represents the Union Oil Company.

The task of building these tanks is a huge one. The measurements are as follows: Capacity of each tank, 1,000,000 barrels of oil. Diameter, 601 feet, inside. Height above grade, 20 feet 4½ inches. Cost of each tank, $250,000, making a total of half a million. If the tanks are not completed upon schedule time, a penalty of $100 for every day's delay will be exacted under the contract.

Each reservoir required the excavation of 80,000 cubic yards of earth. Twelve thousand cubic yards of the best concrete is being used in the construction work. It is being placed with four mixers and two hoists. In the construction of the roof and supports about 1,500,000 feet of lumber will be used. Eighteen thousand barrels of cement is necessary for the concrete. Two hundred and fifty tons of plain, round steel goes into the walls for reinforcement. Walls are being built upon the "retaining wall principle."

In this work the contracting firm has hired in all about six hundred men, about three hundred of whom are teamsters, the rest being employed in the numerous other departments.

For the excavation and hauling some six hundred head of horses are used. The "tank farm" presents the appearance of a regimental encampment. Blacksmith shops, carpenter shops, machine shops, bunk houses, tool houses and cook houses have been erected. Quantities of hay, grain and straw are being consumed by the horses, the photographs showing better than words can just what an appearance the camp presents. Food for the army of men runs into several hundreds of dollars per day. The amount of materials used is enormous.

The floors of the tanks will be 2½ inches in thickness and are to be supported by a wire mesh, and the tanks will be drained by means of a 12 x 12 x 8 foot sump hole in the center of each, which will taper at the rate of 1 to 100. Pipe will be connected with this sump to pump out the settlings or sediments, as they are variously called. The walls of the reservoirs will stand twenty feet high without being "back-filled" or otherwise supported, and they will taper from an average of three feet at the base to six inches at the top. All the dirt which was excavated is being banked outside the reservoirs across a roadway, and, in case fire should strike the region, will afford what is hoped will be ample fire protection.

A pumping station will be built at San Luis Obispo by the Union Oil Company, and to this the oil will gravitate from the reservoirs. From the pumping station it will be pumped directly to ships at Port Harford or any other location at which the company determines to locate discharge stations. The oil stored will come directly from the San Joaquin valley. The major part of the oil will come from the Midway district, and will greatly help to clear the oil congestion there. The tanks fill a long-felt need, in that, by being constantly replenished, they can be the base of supply for an enormous fuel market.

nstruction at San Luis Obispo, California

SCENES ON "TANK FARM"

The First Step Towards Construction

The Surveyors at Work Upon the Scene of the World's Largest Oil Storage Reservoirs

Grading

After Excavating One Hundred and Sixty Thousand Cubic Yards of Soil, Three Hundred Teams Were Employed in Grading the Site.

Excavating

One Hundred and Sixty Thousand Cubic Yards of Earth Had to be Displaced to Make Room for a Level Large Enough to Accomodate the "Tanks".

Supplies for an Army

A Scene Rivaling a Military Encampment

Further Excavation

Showing Laborers Digging Where The Use of Teams was Impracticable

Making the Molds

A Carpenterial Scene, Showing the Men Who in one Sense Really "Mold" the Future of Storage Oil Tanks.

THE OILS OF VENTURA COUNTY

(Concluded)

THE VARIOUS OIL REGIONS

By HENRY J. JORY, Civil and Mining Engineer

The accompanying photograph shows Mr. Jory, who concludes his articles on Ventura County with the following paper.

THE SESPE SERIES.

Topographically, the Sespe Canyon is a great chasm that cuts the county in twain through its central portion, exposing to view an interesting series of oil-bearing strata such as have no parallel in other regions of the State.

Three horizons are prolific. The first, in order of their bedding, is the Sespe Red Rock or Brownstone, conforming to the middle and upper Eocene. The upper horizon of all, so far as known, is the now generally well known Tar Creek beds of the Miocene. Between these two lies a lesser known series which bear the name of the "Four Fork" sands.

The Sespe Red Rock.

This series begins to be productive at the juncture of the Main and Little Sespe, the old Kentuck wells drilled at this point some twenty-five years ago still producing light oil. Above this point, on the Big Sespe, a number of companies have drilled many wells, yielding a large amount of heavy oil which has not, as yet, been marketed in any great quantities. In the lower reaches of the Little Sespe are the wells of the Brownstone Oil Company, and the Union Oil Company, the location being known as "Foot-of-the-Hill." In all, about twenty wells are pumping here, and are making a good production. Various seepages, both large and small, first indicated the prolific nature of these beds.

The Tar Creek Beds.

The true importance of this interesting series as a producer of the highest grade of refining oil is just beginning to be felt and appreciated. In the first instance the oil bearing nature of the rocks involved was attested by many large oil springs along Tar Creek and its tributaries, these seepage zones being of more recent date and consequently more "alive" that those of other portions of the county. It was here that the Union Company drilled a long string of wells in the early days of the field, and built the initial pipe line, supplying from this source its original refinery at Santa Paula. It might be of interest to note in passing that while the first of the California refineries has been long since abandoned, its site is now occupied by the Capital Crude Oil Company, which is supplying the entire local demand for gasoline and distillates with marked success.

The Tar Creek wells are from 1,200 to 2,100 feet deep, and, at the start pump from 100 to 300 barrels per day of very light oil, (up to 34° gravity, the average kerosene being 33° gravity), the high grade gasoline contents of this field ranking its oil as the most valuable in the state.

The life of the wells is from fifteen to twenty years, all the original wells being now too low to be profitable. Some of the new wells just finished have come in at from 150 to 200 barrels, amply indicating that the field is by no means exhausted. The chief drawback to the region is its distance from railroad transportation and the difficult nature of its roads. The road out of Little Sespe has, at places ,a 35° grade, being all but impossible to negotiate with any reasonable load. In developing the property roads must generally be built. the costs of which are far in excess of the cost of the rig.

Tar Creek itself is a vast amphitheatre of great grandeur, surrounded on three sides by a magnificent escarpment of cliffs fully 2,000 feet in height. These cliffs are Pleistocene, their degredation leading to the curious phenomenon of the upper Little Sespe known as "Sliding Mountain." Every rain, of no matter how insignificant a character, falling upon these soft sands and gravels, sends thousands of tons of detritus down into the lower canyon.

Immediately above the productive sands of Tar Creek lie the characteristic marl beds of the Monterey, heavy with Pecteus and Turritella, thus identifying this horizon with the producing region at Bardsdale. The Four Fork sands are now believed to be local in character and to be an interbedded series lying between the Sespe and the Monterey; and of age corresponding to the Middle Miocene. The wells are of small size, but apparently inexhaustible as, after twenty-five years, they are still productive.

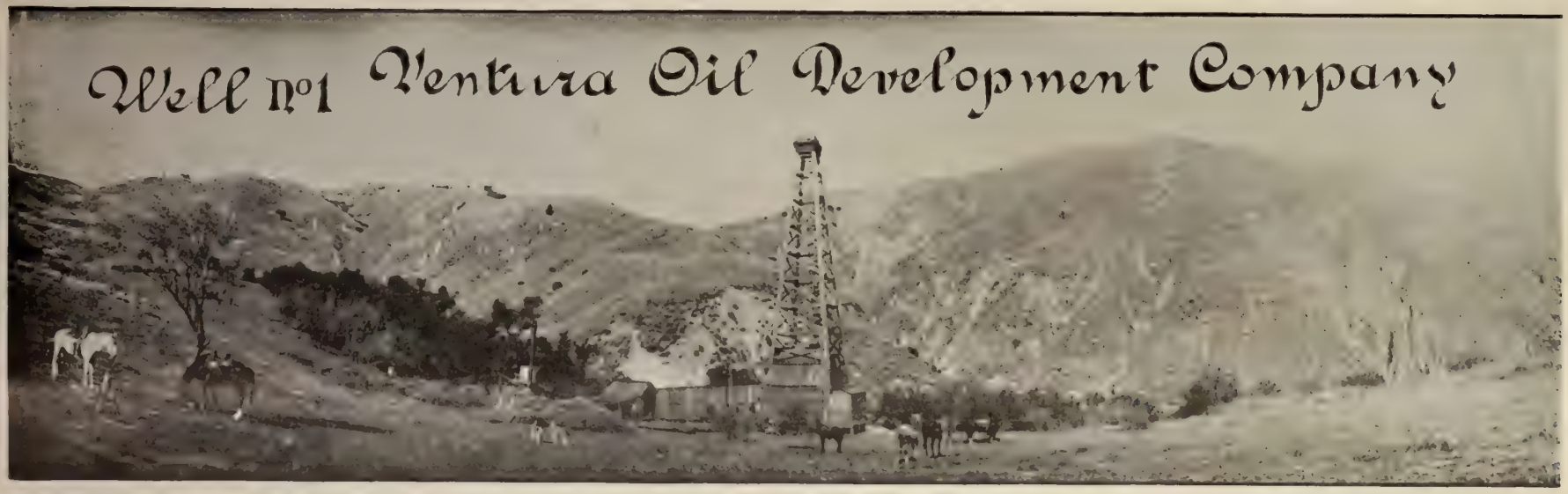
The Bardsdale Field.

This now well known region lies on the south side of the Santa Clara river almost opposite the mouth of the Sespe Creek.

The producing portion of the field follows a definite anticline with an east-and-west strike, the axis being about half a mile back from the edge of the valley. The anticlinal fold is traceable for a distance of some seven or eight miles, and there seems no reason why the sand would not be productive for at least this distance. So far, only the north limb of the anticline has been drilled, and this for a distance of approximately one and one-half miles only. The start was made by the Union Oil Company upon a small seepage in a narrow ravine at the east end of the field. In all, twenty-seven wells were drilled by them, of which number twenty-four are still producing oil of thirty degrees gravity, Beaume, worth at the well $1.30 per barrel.

Adjoining the Union is the original property of the Bardsdale Crude with ten wells. Several other companies are also drilling upon the same strike, with good success. The region being easy of access, near the railroads with good roads and pipelines, it lends itself easily to cheap exploitation. At Bardsdale, it is believed, some of the cheapest and most quickly productive wells in the State have been drilled: Certain it is that on many of the Union Oil Company's wells, drilled hereto a depth of nine hundred feet and beyond, the

Scenes in the Ventura Hills Illustrating H. J. Jory's Articles on "The Oils of Ventura County"



Both of these cuts, lettered by the Author, show to good advantage the country from which is drawn California's Lightest and best refining oils.

labor costs amounted to less than $400. The Union's No. 16 came in at sixty barrels and was put on the pump just **six days** after "spudding in" began. Light tools and small derricks only were needed, and the oil is produced absolutely free from water or sediment. This is, to say the least, exceptional among the fields of this State.

All wells here are pumped on the jack, one well of the series generally furnishing enough gas to run the pumping plant, the excess gas being burned in torches set about the premises. In many of the wells sucker rods are pulled only once in five or six years and the total expense of pumping the entire string of from twenty to thirty wells does not exceed $5 per day. The net profit is therefore large.

Future of the Refining Industry.

The world actually faces a shortage of the lighter petroleum products, gasoline, kerosene and the distillates. Indeed, I believe that the time is not distant—that it is now almost at hand—when the great bulk of California fuel oil will be "topped" in the field and the few per cents of distillates will be sent to the refineries for further separation.

Gasolene is now the most valuable and most sought after of all the various constituents of petroleum. Time was, at the earliest Pennsylvania refineries, when a boy was kept about the works for the sole purpose of throwing buckets of gasolene up against the tanks, thus disposing of it by evaporation. Carrying probably ten times the volume of gasolene possessed by other California oils, the petroleum of Ventura County is just now receiving very wide spread attention from the various producers of the country. The perfection of the gas engine has, in effect, caused this demand for a volatile explosive agent such as gasolene, while as to kerosine, the vast hordes of Asia, numbering at least five hundred million people, who formerly went to bed with the last rays of the sun, are now furnished with tin kerosine lamps, sold in that market **below cost** by the great Standard Oil Company, to encourage the use of their light-yielding agent.

The refining oil producer, ten years hence, will surely occupy a peculiarly advantageous position in the line of money-making commercialism.

The End.

Editorial Note: These excellent articles by Mr. Jory were written during moments stolen from a particularly busy business man's time. Mr. Jory has written every word of them during the rush of business, the last words being penned when he was called abroad to attend to the sale of large properties in Mexico. Mr. Jory is a graduate of the University of California and his career has reflected great credit to the training received at that institution. A number of years ago he went to Mexico and it is safe to say that there is not a man alive either in Mexico or America, who knows more than he about the west coast of that country, as far as mining properties are concerned. For years Mr. Jory has had engineering parties out under his direction platting every foot of the country. The map published in the last issue of the California Derrick, showing the Ventura Oilfields, was drawn upon very short notice; but its absolute faultlessness was characteristic of Mr. Jory's entire work. Whatever work he assumes he does thoroughly, and for this reason these seemingly simple papers published in the last three numbers of the California Derrick, are really of the most intense practical value. Mr. Jory's papers place before the reader in the simplest possible form the experience of one of the best trained engineering minds in the West, and a knowledge of facts which could not be otherwise gained without great difficulty and study.

VENTURA NOTES

The National Ventura Oil Company is preparing to drill on the eighty acres comprising the N. ½ of the N. W. ¼ of section 20, 4-20, Ventura County, six miles from Santa Paula, in what is considered good holdings, with good prospects.

The Bard Oil and Asphalt Company has deepened well No. 28 to 770 feet and has a production said to be 15 barrels of 15 gravity oil.

Well No. 2 of the Pyramid's new series continues to flow between the casing while drilling continues. The well is down 1,700 feet.

The Capital Crude Oil Company's new well on the Santa Paula tract is making about 50 barrels per day flowing between the casing. The oil is said to be 30 gravity, Beaume.

Slocum Bros.' 200-acre lease on the property of the Piru Land & Water Company has been taken under option by a Boston syndicate at a price not made public. The property is close to the Ventura Oil Development and Modelo Oil Companies.

The Dixie-National is down more than 2,000 feet in Little Sespe Canyon, a mile south of the Rose, Cosmopolitan and White Star properties. A very high gravity oil is obtained here, and the well was a good producer at 1,600 feet. It is being deepened for discovery purposes.

The Gates Oil Company is said to have acquired sixty acres from the Canadian Queen Oil Company, heretofore known as the Stutzman and Pearson property. The Canadian Queen is financing a company by the name of the Canadian West, operating on eighty acres west of the Queen.

Cosmoplitan well No. 2 has been placed on the pump and is now producing 135 barrels of oil daily.

Ventura Oil and Development is progressing very satisfactorily with both wells; there is nothing new at present in regard to this concern except that the sand is being steadily drilled into.

For further information on Ventura County Oil Fields look under "Land Sales of Recent Date."

MUCH OIL USED IN NORTHWEST—CANADIAN FARMERS HEAVY CONSUMERS.

The Wall Street Journal is authority for the following statement given out in the form of an interview with a prominent oil producer and distributer who had just returned from Winnipeg:

"It is surprising how much oil the Canandian farmers consume. The Northwest Grain Dealers' Association will burn up between 2,500,000 and 3,500,000 gallons of gasoline and naphtha in elevator engines between August and December. I was asked recently to make a bid for 4,000,000 gallons for delivery this year in Winnipeg. There is very little coal in that country, but even so you would not expect to find oil in such great use by farmers. It is their power for plowing, harvesting, threshing and hauling grain to market. Cheap naptha or oil distillate is used in plow propulsion."

LOCOMOTIVE OPERATED BY NATURAL GAS.

According to a dispatch from San Antonio, Texas, the Texas, Arkansas and Louisiana, a seven-mile railroad, is burning natural gas in its one locomotive, after having tried both coal and oil and it is said that the gas is most satisfactory fuel. The tender has been converted into a standard gas tank and it is filled with ease with natural gas. At the end of the fourteen-mile round trip there is still fuel left.

The inventor of this scheme is J. S. Connelly of Carthage, Co. It has never been tested, so far as known, on any long runs.

REFINING AND PRODUCING OIL COMPANY'S PIPE LINE WILL BE BUILT.

J. C. YANCEY

Who secured 25,000 acres of oil land in the Midway and the "McKittrick Front" long before the big sand was tapped, giving the world its most famous gushers.

The Refining & Producing Oil Company's proposed pipe line from Oilport to Midway is to be built, says J. C. Yancey.

Mr. Yancey and his partner, T. N. Barnsdall, are among the largest oil land holders in Western Kern County. Yancey is an official and the organizer of The Refining and Producing Oil Company, which owns a large modern refinery at Oil Port, and thirty miles of pipe line connecting the refinery with the Santa Maria field, and the steamship Catania, all of which is valued conservatively at $2,000,000. Yancey said to the Editor of the California Derrick on September first, that the venture of building an additional hundred miles of pipe line connecting the refinery with the great Midway field is progressing satisfactorily and that work will be begun in laying the line just as soon as he can adjust things to meet the new conditions brought about by the large production and the small drop in prices of recent date.

It is the belief of the California Derrick that Mr. Yancey will bring this great enterprise to a successful conclusion. Mr. Yancey has made good up to date. He is used to great undertakings. He came to California less than two years ago a stranger in a strange land. He had been associated for years with T. N. Barnsdall of Pittsburgh, the largest individual oil producer in the world, and the man who controls the natural gas situation of the Middle West. He visited Midway and McKittrick and went into the mountains back of these districts, where he spent months in the study of the formations at the point at which they were exposed at the surface by upheaval. He returned with the firm conviction that a great oil sand that had never been tapped underlay the Midway district for a distance of thirty miles, and that an entirely new oil field was to be had for the asking on the McKittrick front. From then on Yancey devoted his entire time to the gathering of oil land until he and his partners held over 25,000 acres. His investment was over $200,000 before a pint of oil had been produced from his holdings.

The California Oil World described him at that time as a young man of exceptional energy and audacity; but it is those two qualities that make the pioneer whom hardship cannot warp, nor disappointment sallow, and who leads the world one more step forward. Mr. Barnsdall stated when interviewed, "that he had never seen the holdings in California in which he is interested with Mr. Yancey, that it was impossible for him to be on the ground at the time of gathering them, that they had all remained in Yancey's name for months on the records, and that Yancey could have sold them and kept the proceeds as far as the law was concerned, but that he had implicit confidence, and when the time came for him to receive his share of the enterprise, Yancey delivered to him his portion to a penny."

A short time after the big sand had been tapped, the Midway rush began, as the gushers one after another came in; since then there has been nothing new except the names of the new gushers. Yancey has a fortune in his lands alone, but he saw the floods of oil which were to be tapped and came to the conclusion that pipe lines and refineries were necessary. The Crocker interests were brought into harmony with this idea, and the final result was that the Refining and Producing Oil Company was organized, which was a merger of all the interests mentioned with a $21,000,000 capitalization and all the above splendid holdings. J. I. Lamprecht became President of this merger. Mr. Lamprecht is considered the most successful independent refiner in the United States; he is also President of the National Refining Company of Cleveland, which owns a number of refineries in the United States and Canada.

The line will transport the company's oil for its own use and oil for others at the rate of 22½ cents per barrel, storage to be paid on the oil at the rate of one cent per barrel per month.

Yancey seems to believe that there will be a mighty battle waged on this coast within a short time for control of the nearest oil markets. When informed by the Editor of the Derrick that it was current talk in Great Britain that the Standard was about to supply all the great manufacturing centers there with fuel oil, and that pipe lines might actually be constructed from the sea to the interior of the island with which to deliver the oil to the manufacturers, he was not at all surprised and stated that in his opinion the British could be persuaded to use petroleum more extensively for fuel, and that all California oil marketing concerns would find a good market there, which would grow much larger when the Panama Canal is completed.

COLONEL SPELLACY WINS HIS SUIT.

"Col. Timothy Spellacy, Who Always Wins."

Colonel Timothy Spellacy is an acknowledged "winner." He has won friends, honor and fortune, both in California and in the East. His latest victory came in the Superior Court of Los Angeles County, where he was defendant in a suit instituted by Mr. C. S. Young, well known oil man, for

$2,140,000. Mr. Young lost the suit, receiving by decision of the court exactly what Mr. Spellacy claimed was his due; and no more. Mr. Young claimed a half interest in both the Mascot and Illinois Crude Oil properties and $500,000 for incidental damages. His original investment was $8,000. He was awarded in the respective companies a one-eighth and one-twelfth interest, which amount, according to the final adjudication and settlement, to about $70,000, having grown to that size under Mr. Spellacy's care. Mr. Young's chief claims were that the Colonel had retained moneys and property supposed to be held in trust. He entirely failed to establish them. It is pleasing to have an Eastern paper, which is often hostile to Westerners, speak as nicely as the Oil City, Pa., Derrick speaks of the Colonel, when it ran the following:

"Tim" Spellacy needs no introduction to Eastern oil men, and the same congenial temperament that made him popular in the Pennsylvania and Ohio oil fields has not changed during his sojourn on the Pacific Coast, as a result of which his friends here are much enthused over the outcome." * * * Here the Oil City paper gives substantially the same information as given above, but continues: "The Mascot Oil Company in section 26 of the Midway field, contains 160 acres of possibly as good oil territory as can be found in the State and as indicating the appreciation in which it is held $2,500,000 has been refused for the property. Mr. Spellacy was organizer of the company and for more than 10 years has been devoted to the property, its present financial condition is a result of his work. Stock in the company has increased from 20 cents to nearly $2.75 a share. The stock is paying dividends, the oil being contracted to the Standard Oil Company, which is an assurance that it will be run without expense for storage. The Illinois Crude property is in the Kern River field, and is considered a valuable holding."

Besides the Mascot and Illinois Crude Oil Companies, the Colonel is heavily interested in Premier, S. W. & B., and other good corporations.

Colonel Spellacy is at present candidate for the office of Lieut. Governor of California. He will have a splendid following in the oilfields, where every one wishes his good "luck" to continue.

VALLECITOS OIL DISTRICT HAS BRIGHT OUTLOOK—REAL OILFIELD.

A bulletin is now being prepared for the United States Geological Survey by Dr. Robert Anderson covering the San Benito County oil region, variously known as the Vallecitos and Arnold districts, the latter name having been bestowed upon it to honor Dr. Ralph Arnold by the Range 16 Oil Company. Dr. Arnold, however, has declined the honor for two reasons, the first being his innate modesty, the second that he has enlisted capital in the region and has highly recommended it, reporting favorably upon it for New York, Boston and London investors.

A Boston company known as the New Bedford is now down 1,700 feet, water has been cemented off; they have had several blowouts. A flowing well is predicted. The New Bedford is a close corporation.

The Range 16 Oil Company has begun operations with a heavy standard rig, 45 h. p. boiler, drilling engine of 23 h. p., and all aparatus to meet any emergency. This is also a Boston company and is amply financed.

There is a well defined report that Mr. Ralph Arnold will shortly start to drill here, it being currently rumored that he has interested Boston capital with him.

News from Mendota is to the effect that the Hall-Berg well on section 36, 16-10, Vallecitos district, has obtained a daily production of twenty barrels of thirty gravity oil at a depth of only 120 feet. The well is regarded as a very unusual well. Reason ascribed for obtaining production at such depth is that the well is supposed to have been drilled directly upon the axis of the South anticline. Big wells are predicted at a depth of about 1,800 feet, if drilled along the syncline. It is reported that a deep hole will be drilled here by the Hall-Berg Company.

SANTA MARIA

PALMER SPRINGS SENSATION—WILL COMPETE WITH THE GREAT REFINERS AND TRANSPORTERS.

It has been authoritatively given out that the Palmer Oil Company is planning a campaign of expansion on a gigantic scale, which is successful, will place it well on the way to join the Standard, the Associated and the Union, as representing the leading oil producing companies of the West. Two million dollars will be spent at once in building a pipe line from Santa Maria to tide water, a refinery will be constructed either at Gaviota or Oilport and two modern oil tank steamers are to be constructed to handle tide water traffic. In addition four steel tanks of 55,000 barrels capacity are to be constructed which, with other facilities will give the company storage room for 1,470,000 barrels. The Palmer still owns contracts to deliver a balance of 3,000,000 barrels of oil to the Associated and Union Companies. The company is now producing about 10,000 barrels a day of 16 gravity oil from two wells. Three other wells are nearing completion and two more producing wells are earning about $1,800,000 a year, according to the company.

PALMER MAY SELL EXCESS OIL TO REFINING & PRODUCING OIL CO.

It is generally thought that the Refining and Producing Oil Company has decided to extend its 8-inch pipe line to the Palmer property in Cat Canyon to take the oil over and above what the Union and Associated are handling, there being a surplus at present. This pipe line was built from the Oilport refinery to the old Graciosa property. Since the failure of the Graciosa wells and the consequent failue to operate the refinery the pipe line has lain idle. To reach the Palmer property will necessitate an extension of 12 to 15 miles. The refinery is to be re-opened when the connection is made. The company is down some 4,400 feet in the test hole started by the Graciosa on the south part of its land and on the west line of the Western Union property. So far as known it has no oil yet in commercial quantities, but is preparing to go still further, if necessary to 5,000 feet.

The Coblenz, next to the New Pennsylvania, has resumed drilling operations. They are reported 2,900 feet down with six-inch pipe.

Stendell No. 1 has cemented off at 2,400 feet and is about to be tested.

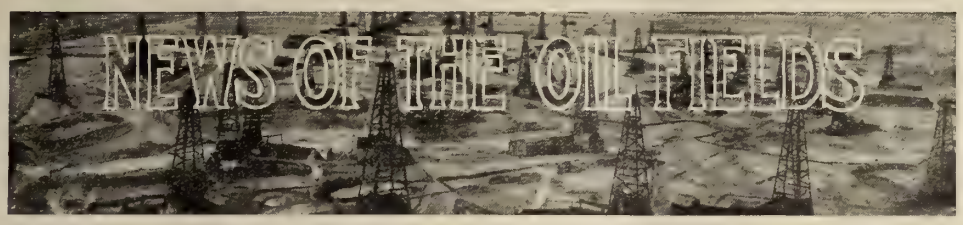
Union Oil Company has discontinued most of its operations in this field. Its Midway supply is ample at present.

Palmer No. 2 is still producing 8,000 barrels daily.

The strike of the Pinal Company on the Fleisher tract in Cat Canyon at the depth of 2,100 feet establishes the fact that the district is of much larger proportions than at first supposed. The Pinal well is about a mile from the New Pennsylvania well on the Fugler tract and the depth of pay sand is reported at about 190 feet. The well will be put on the beam in a few days.

Forty barrels of 26 gravity oil is said to be the production of the Western Union No. 23.

A report says that drilling may be abandoned in the Union's deep Bastanchury well because the tools were dropped at 4,400 feet.



Reported by
Special Field Representative
of the
California Derrick

COALINGA---By Guy H. Salisbury

Coalinga, Cal., September 7, 1910.

The present attitude of the General Land Office is an entire reversal of its former policy, it having recently ruled that a "discovery" of mineral oil *must* be had before "locating a placer oil mining claim." . . . "Ever since the passage of the Placer Mining Act" (about 1866) "lands valuable for deposits of petroleum were considered as open to location and patent as placer claims and as such, records made, followed by and patents as a matter of ordinary course." (Morrison's Mining Rights). "And such action of the Land Office was followed by the Courts in dealing with oil located, or patented as placer ground, without question of its regularity." (See Gird vs. California Oil Co., 60 Fed. 532, and Van Horn vs. State, 40 Pac., 964). "After this unbroken procedure of more than twenty years, the Land Office in 1896 (Union Oil Co., 23 L. D., 222) abruptly held that oil was not a mineral and oil land therefore not subject to entry. This ruling was immediately followed by an Act of Congress making such lands in terms patentable as placer (29 St. L., 526, post p. 486). This ruling of the Department induced some confusion, was later reversed by the Secretary of the Interior. (25 L. D., 351). The judicial rulings that oil is a mineral have been uniform." The Oil Placer Act of February 11, 1897, provided: "That lands containing such petroleum, or other mineral oil, which have heretofore been filed upon, claimed or improved as mineral, but not yet patented, may be held and patented under the provisions of this Act," etc. This legal situation held; lands were located and discovery made and patents were issued. The prospector and pioneer after years of labor under the former ruling is now confronted by a sudden change of front by the General Land Office, contrary to rulings made, and which have stood for years. Applications for patents of placer claims were allowed, and patents issued, when "the sworn statement of the claimant that he has the possessory right" (his location notice was recognized as a possessory right) "to the premises therein described, in virtue of a compliance by himself, and *by his grantors, if he claims by purchase*, with the mining rules, regulations and customs of the mining District, State or Territory," etc. To make a discovery of mineral oil in commercial quantities before location of the claim is unreasonable. The Courts have held that a location had a possessory right in fee, "subject, however, to the paramount title of the United States of America in the whole thereof," that he had a right to transfer his title by deed or other conveyance. We are then confronted with the proposition of going to the United States Supreme Court for redress, or to Congress for an affirmative bill wherein the oil miners' rights are set forth. The popular cry for conservation that has captured the East, that is spreading over the West, will have to be met and combatted. Conservation, recognizing the rights of the individual, we do not object to, but the present attitude of the Administration appears to be to crush the individual and build up a monopoly to be controlled by great interests. The leasing feature is full of objections; secure a blank form from the Department of the Interior of one of the leases used in Indian Territory, note the conditions therein, and then apply that same to California. We must meet the issue with an organization of men who represent interests on Government land, not a bunch of men who hold patented land, whose interests would be best served if the Government land all about them was withdrawn, that they might drill up their lines and drain the land held for conservation. This issue is nearing the political line; how does your Congressman stand on this question? Ask him, and be sure you are right when you cast your ballot in November next.

The Creme Petroleum Company, section 30, 20-15: The Parker rotary drilled the 2,000 feet in well No. 1 in forty days, the ten-inch casing was set in and the hole was found in perfect condition, pipe going in free. The well is now 2,220 feet deep, drilling with standard tools; will shut off the water at about 2,500 feet; the oil sand is about 2,600 feet, as shown by the American Petroleum wells adjoining this property. Formation, blue shale, occasional hard shells and hard, flinty oyster shells. Well No. 2 is being drilled with a rotary, now 1,120 feet deep, with six-inch drilling pipe, making a 14½ inch hole for the ten-inch casing; the rotary will carry the hole to 2,000 feet and finish with standard tools. The forty-horsepower boilers have furnished the lease with dry steam for the rigs, and a seventy-horsepower boiler is now being set to increase the steam power required for the additional work. The material for the rig for well No. 3 has been ordered. Well No. 1 will soon be among the producers of the West Side field.

The Baird Oil Company, section 24, 22-18, cut off the 6⅝ inch casing 200 feet above the shoe, that was held by the cement; an effort is being made to drill by this pipe, the water will be shut off at a point below where it was cemented before. The well is reported to be 2,660 feet deep with 4½ inch casing. At about 2,560 feet the bit entered a hard oil sand, eight feet of which was very hard, ten feet of this sand compared well with the sand on the East Side, showing considerable gas; from this formation the bit went into blue shale. Report has it that at 2,300 feet and at 2,560 feet, oil sands were cut.

The Security Oil Company, section 8, 20-15, are 2,880 feet deep with rotary, in 6⅝ inch casing. The fish-tail bit is in eighty feet of live oil sand, the head man says that it is the best showing in the field; the well is showing up fine, as shown in the flush water from the rotary. There will be about 120 feet of oil sand at this point, as shown by the logs of the two wells of the M. K. & T. to the north. The job of cementing was perfect, the well was bailed dry and left standing; the next morning the pipe had not sweat, an indication that the cement was well up on the outside of the pipe.

Parties returning from the East report that the manufacturing concerns engaged in manufacturing oil well supplies are very busy, working full time with full crews. The National

Tube Works at Pittsburg have orders for 1,100 carloads of casing and line pipe for California points. From remarks dropped it was gathered that much line pipe was going to California for pipe lines. The general feeling in the East would indicate increased activity in California and other Western points where oil is the chief industry.

The Coalinga Eight Oil Company, section 8, 20-15, have set in their 2,005 feet of 8¼ inch casing, the rotary drilling the hole to that depth. Superintendent McCutchen reported the hole in perfect condition, that the pipe was set in free, showing a straight hole. The rig is being changed over to a standard. The well will be completed into the pay sand with standard tools. A rig has been completed to drill a water well. The water sand is about 400 feet at this point.

The Coalinga Crown Oil Company, section 30, 19-15, cemented off the water at 1,890 feet. After standing about fifteen days the well was tested, and it was demonstrated that the water was shut off. The 6⅝ inch casing was set in and drilling resumed. The well is now 1,945 feet deep. Formation, shale and sand; showing of oil very satisfactory, with some gas.

The Polvadore Oil Company, section 2, 21-16: Contract for the buildings have been let; the oil and water tanks have been ordered; the combination rotary-standard rig is completed, and the rotary will be installed this week. Work will be pushed from now on.

The M. K. & T. Oil Company, section 8, 20-15: Thomas Hayes, the cement expert, cemented off the water in well No. 2 at 2,765 feet with extra heavy special casing. This is the last job of cementing that Mr. Hayes did before leaving for Egypt.

The Coalinga Metropolis Oil Company, section 26, 19-15, are in a fine body of oil sand; the well is on the beam, and the amount of production will soon be known. Over 200 feet of active oil sand showing up light gravity oil.

The Dominion Oil Company, section 7, 23-17, are 1,500 feet deep, with ten-inch casing; the water will be shut off at 1,600 feet. Formation, shale and stringers of oil sand showing oil and gas.

The Coalinga Royal Oil Company, section 8, 19-15, are 2,228 feet deep; 8¼ inch casing; formation, light colored shale, shells and a little showing of oil in stringers of sand; considerable gas showing.

The Confidence Oil Company, section 31, 19-15, are 680 feet deep in well No. 15, with ten-inch casing; formation, blue shale. The company will keep one string of tools running on new work.

FIRE DESTROYS REFINERY.

The California-Kern Refinery, located in the Kern River field, and which was recently leased by Warren Brothers of Boston, was burned to the ground a short time back. The fire was caused by the blowing out of a stillhead. It is stated that the owners have a patented process for asphalting streets.

FOR SALE—2000 shares of Big Panoche Oil Stock, A bargain. Address Dept. C, Calif. Derrick.

DEVICE IS VALUABLE.

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NOTE—Send for free sample copy of the illustrated oil magazine "Securities" It contains data of interest to oil operators and investors.

THE GENERAL AND LESSER KNOWN USES OF ASPHALT

By D. BASIL W. ALEXANDER, Pacific Coast Chemist for the Barber Asphalt Paving Company

This snap shot shows Mr. Alexander under a derrick on the property of the Coalinga Crude Oil Company, in which he is interested.

It is as well to state at the beginning that by the term "asphalt" I mean the pure bitumen, as made by the distillation of petroleums having an asphalt base, to distinguish from the more or less impure bituminous rock or sand, that unfortunately goes under the same name; and which are also used extensively for paving purposes in some localities, notably the Eastern States, and other localities in the vicinity of the larger deposits.

Ever since the time when man rose from a quadruped to a biped, and assumed dominion over his former quadrupedal associates, he has realized the necessity of having a recognized and easy route to points more or less remote from his own place of residence, the necessity being given an added impetus when the spirit of commercialism invaded the various communities. This need of easy travel exhibited itself primarily by choosing a line of progression towards the objective point that eliminated as far as possible the steepest grades; that this is simply a relic of the quadrupedal instinct is seen by the country observer in sheep and cattle districts, where the trails between pasture and the water supplies follow as far as possible lines of easy gradient.

These paths of man at first (like the cattle trails) turned aside to avoid large rocks and trees, and even now, on the level ground, it does not seen possible for man to strike out a perfectly straight course without help, and a crooked trail never straightens itself by usage; tho' a road will.

The first efforts towards road building were doubtless made by removing easily displaced obstacles, and the next by straightening existing paths, as the necessity arose for arriving at distant points as quickly as possible; this step was assisted by the use of draught animals, and the advent of means of conveyance. Then, the road being established, came repair work, such as the filling of "chuck holes" consequent on the use of wheeled vehicles, but some country roads have not yet reached this state. But from this period the effort has been to construct a road which would not form chuck holes, and inequalities by the pounding of iron-rimmed wheels.

Thus the roads of man have risen through the stages of country rock roads; stone blocks of the Roman style, cobble stones, granite sets, macadam and brick up to the present sheet asphalt pavement of cities, and asphalt macadam for country roads and towns, and in some cases even cities themselves. The object being to obtain a smooth, lasting, dustless, noiseless and easily repaired pavement, combined with the least cost for maintenance, and perfection for repair.

Such then is a brief history of the development of the modern asphalt pavement, which is now universally considered the foremost type of pavement that is constructed, except among those who have special species of their own to exploit, and even in these cases the better ones use asphalt in some form or other.

Since, then, good roads are common to all kinds and conditions of mankind we see that the foremost use of asphalt is as a factor in pavement making, and it is for this purpose that the largest part of the output goes. Next in importance is the use of asphalt for roofing and other forms of waterproofing, then follow paint and varnish manufacture, pipe dip, electrical insulation, printers' ink, photography, etchers' resist, etc., and possibly later many other uses in the arts and manufactures.

As a paving material the forms, usages and applications of asphalt are various and dissimilar. It is used:

(1). As a solid in sheet pavements for a consistency (usually 50-100 deg. penetration) adapted to conditions of climate, grade and traffic to which it will be subjected; taking into consideration of the latter condition that a new asphalt pavement will draw to itself an amount of traffic sometimes 50% greater than before the pavement was laid, for the reason that a teamster will frequently go some distance out of his regular way in order to secure an easier draft for his team, and comfort to himself.

(2). As a flux to raise the penetration (increase the softness) of a solid asphalt that has been made too hard to be used in that condition, owing to having been left in the still too long, and the distillation carried too far generally in order to procure the lubricating oils given off at the higher temperatures. The best practice, and the one adopted by the best makers of asphalt, is to reduce the crude oil to the consistency desired, and stop the distillation at that point; this largely does away with the "cracking" of the oils, and consequent formation of carbenes, than which nothing is more detrimental to the asphalt formed. In former years it was considered best, for purposes of shipment, to make the penetration quite low, and then flux back to the consistency required by the pavement under construction; and this practice led to the failure of many pavements, not on account of the fluxing, but of the condition of the hard asphalt before fluxing, a condition that without going too deeply into the scientific explanation it is sufficient to say extends and grows in the pavement after laying even when the material is made a good deal softer than was customary for that locality.

(3). As a soft asphalt, that is above 100% penetration, for use in asphalt macadam, either by mixing with the

hot stone and sand in the usual mixer, or softer still, to be used hot, and poured or sprinkled on the cold stone rolled into place on the foundation, as in the impregnation method.

(4). As an oil (road oil) from which the lighter distillates have been removed in a still, and that form sprinkled, hot, warm or cold, on the surface of a road, and harrowed, or mixed in by a variety of methods; the object being to produce a water-proof and dustless skin over the surface to carry the traffic. In some cases the oil (or crude oil) is simply sprinkled on the road, and coarse sand scattered over to take up the excess of oil; and where the road consists of a large amount of fine loam or dust this method is to be preferred, as a certain stability is thereby given to the wearing surface of the road. In some localities the sand that is brought up with the oil makes a good road, but it needs a fine sand scattered over it, as generally the sand contains large voids, which have no stability when filled with oil only. An oiled road to be perfect should be kept dry of oil so as not to be sticky, as the chief objection that teamsters have to an oiled road is that it "drags."

(5). As an emulsion under various names and patents for the same purpose as in the preceding paragraph. In this form it can be mixed with water, and sprinkled on in that very liquid condition, and one capable of soaking into the surface, also the supply of available asphalt can be easily regulated to the requirements of the road under consideration.

As a roofing material asphalt is used in three forms, hard, soft, and mixed with dust to form a mastic. In the hard form, that is with a low penetration it is in a condition to resist the heat of the sun, as the melting point rises with the fall in penetration; it therefore will not flow and leave portions of the roof with a thinner coating to turn the rain; as a further safeguard against the flowing in the hot sun sand or grit is scattered over the surface of the material while still holding the heat of application; this will permit the use of a softer asphalt than could otherwise be used, which prevents the forming of cracks during cold weather. This quality of water-proofing was understood by the old Mission Fathers, when they built the Missions of Southern California. Where the asphalt was washed up by the sea they have frequently used it as a covering for small outhouses, sometimes even as a cement for the cracks between the bricks of their floors; they, however, did not appreciate the advantage that sand has on the roof as the roofs seen by the writer would not be suitable without the accompaniment of an umbrella.

In the soft form it is used in a specially prepared and combined form by saturating, while hot, absorbent material such as paper, felt, burlap, etc., and then covered with some material such as very fine sand, or dust to prevent adhesion when in the rolls, in which form it is shipped; some makers pass the paper through very hard asphalt heated to fluidity, before dusting. It is also used somewhat soft and heated as a paint coat on the foundations of buildings in damp places, and for the lining of reservoirs.

For "mastic" asphalt is mixed with a large amount (50%) of dust, and as such used as flooring, sidewalks, roofing, etc.; and in this form gives great satisfaction. On the new Federal building in Los Angeles the roof after being covered with waterproof paper, was further covered with hot mastic, and while still hot had tiles pressed in, making a perfect roof. In this form (mastic) it is useful combined with stone and sand as a shock absorber for the insulation of delicate physical apparatus from the vibration occasioned by passing trains, steam hammers, or any other cause. Quite recently the writer had occasion to notice this effect by hearing the very decided difference in the sound of a street-car in Fresno, when passing from a track supported on a foundation of hydraulic cement concrete to one supported on asphalt concrete. The latter was perceptibly quieter.

As paint, varnish, and pipe dip the very hard and pure forms of asphalt, either artificial or natural, are used in combination with various other materials, such as linseed oil, turpentine, resin, gasoline, etc., besides other substances by different manufacturers which have come under the writer's analytical observation, and which are the makers' own secret.

In photography, asphalt, made liquid by means of a very volatile solvent, is used for blocking out large surfaces not intended to show in the picture; and for this purpose must be free from the oil constituents that give it its viscosity or stickiness.

In a modified form of mastic it is used by engravers on the surface of metals. The surface is smoked to allow of the design being drawn on, and then the portions for removal are taken away by suitable means, and the plate covered with an acid or other chemical. After being sufficiently "bitten in" the resist is melted and cleaned off, leaving the engraving exposed. Poured into a pan it is also used to hold articles, or engravings to be finished up with the dry point. It may also be used as the black "niello" of the letters of name plates.

Sufficient has been here written to show the wide applicability of asphalt to the arts and manufactures, and the end is not yet. It may be of interest to give a few of the common tests for asphalt and their significance. These are:

(1). Penetration.
(2). Bitumen by carbon bi-sulphide.
(3). Bitumen by carbon tetra-chloride.
(4). Bitumen by 86% naphtha (or gasoline).
(5). Softening and flowing points.
(6). Fixed carbon.
(7). Volatile for time at temperature.
(8). Ductility.

We will extend these in the above order:

(1). Penetration. By this is meant the depth that a No. 2 sewing needle, weighted with a given weight (100 grams) when free to fall will penetrate in a certain time (5 seconds) at a standard temperature (77° F. or 25° C.) and is registered on a dial: each degree on the dial represents a downward movement of the point of the needle of 1/10 millimeter, and is a measure of the softness of the asphalt. It is the most useful single test. There are in use two machines generally recognised for this purpose (a) the District of Columbia standard, or Dow machine after the inventor A. W. Dow; and (b) the Penetrometer devised by the New York Testing Laboratory, and which was made to obviate the disadvantages of the Dow machine. However, the readings of the two machines as made on identical samples many hundreds of times in this laboratory, are practically the same, and the use of one or the other is simply a matter of taste, convenience or opportunity. The first penetration machine devised by H. C. Bowen and Kenyon's Mastic Tester are superseded, and as far as the writer knows are no where used now.

(2). Bitumen by carbon bi-sulphide. The amount soluble gives the total bitumen in the sample under test.

(3). Bitumen by carbon tetra-chloride. This solvent is supposed to exert a selective action on the hydro-carbons in asphalt, leaving un-dissolved those portions (un-saturated hydro-carbons) which have been formed by the "cracking" of the oils during distillation, or by weathering in the case of natural asphalts. They are soluble from the original sample in carbon bi-sulphide, and are represented consequently by the difference between the amounts soluble in the

two solvents. They are known as "Carbenes." Recent experiments in this laboratory seem to indicate that these carbenes have a relation to solutions of asphalt in carbon tetra-chloride similar to that which the acid sludge has to distillates treated with sulphuric acid: in the case of the carbenes the un-saturated hydro-carbons take up chlorine to complete their stability. Carbenes after separation and drying become partly insoluble in carbon bi-sulphide.

(4). Bitumen by 86° naphtha. This is a method for separating the viscous, volatile and cementitious portions of an asphalt from the solid, brittle and body-giving parts, known respectively as "petrolenes" (or malthenes) and asphaltenes. The latter are insoluble in the high gravity distillates, but they are gradually more soluble as the gravity falls, becoming completely soluble in the low gravity petrolenes, forming thereby what was formerly recognised as "D" grade asphalt: these "letter" grades are being rapidly supplanted among progressive manufacturers by grades by penetration. Dissolved in a lighter oil the mixture is petroleum. (Synthetically this may be true but I doubt if it is analytically.) Penetration may be regarded as roughly a measure of the malthenes, as the greater the per cent of malthenes the higher the penetration, and conversely. Where carbenes occur in the asphalt it is noticed that, for the same penetration, the percentage of malthenes is lowered, or expressed in a different way the asphaltenes are higher.

(5). Softening and flowing points, are the two limits, upper and lower, of the melting point; which is not definite in such a complex mixture of hydro-carbons that constitute asphalt: besides being a check on the malthenes serves to indirectly locate the field; for the melting point of asphalt made from Bakersfield or Sunset heavy oils is higher than asphalt of the same penetration made from, say, Santa Maria oil. This is due to the content of malthenes, and indicates a different series of hydro-carbons.

(6). Fixed carbon is the amount of coke left on ignition under definite and exact conditions. It is arbitrary, and not of much value, as very slight changes in the method of analysis will give different percentages; and the range between a hard and soft asphalt is not great anyhow. However, this paragraph only applies to the artificial, and not to the naturally occuring, asphalts.

(7). Volatile for time at temperature is a useful and easy test to make. It gives the amount of vapors driven off during a heating period for a definite number of hours at a certain temperature. The conditions vary according to the views of individual operators, and range from 300° to 500° F., and 3 to 7 hours. The penetration after heating is naturally always lower, and the per cent of drop will therefore vary; according to A. W. Dow it should not exceed 50%. This test may also be taken as an indication of cracking, as an asphalt made when cracking has occurred will lose a larger amount, and suffer a greater drop in penetration than an asphalt of the same penetration made without cracking.

(8). Ductility is the resistance to breaking of a rod of definite thickness at a standard temperature. It is a measure of cracking, penetration and the character and amount of malthenes present; and being the measure of so many conditions is not of much value. This is an age of specialisms.

As an extension of No. 4, the percentage removed from the malthenes by the action of strong sulphuric acid is useful as showing the amount present of un-saturated hydro-carbons, also the asphalt may be distilled to dryness and the distillate examined for the amount of paraffin scale present.

In addition to the above tests may be added specific gravity, flash and fire points which have the same significance and value as for oils, and are too well known to need any further mention.

Thus much then for the uses of asphalt, and the tests for it; at a future time I hope to describe the various combinations to form the pavements, from the well to the street.

D. BASIL W. ALEXANDER.
Pacific Coast Laboratory,
1000 Date St., Los Angeles, Cal.

THE FUTURE OF AMERICA.

"With the constant expansion of the world's petroleum industry on the one hand, and with a substantial decrease in volume of America's petroleum export trade on the other, a careful observer of facts is inclined to ask the highly pertinent question as to what will be the future of the American petroleum industry. Are American petroleum products which have for years found their way into almost every market in the globe still to continue the honoured position, or do the official statistics just published foretell a steady decline in the supremacy of American oil abroad?

"As is known, from the time when the petroleum industry entered upon its commercial career, America has been foremost, not only in its crude oil production, but in its successful efforts to introduce its refined oils on the world's markets, and though there have been vicissitudes in the industry —as there must necessarily be in every branch of commerce, though in the case of America these have been created owing to the open antagonism of the Government it has attained a stronger position each passing year. An export trade which reaches in volume nearly 1,500,000,000 gallons in twelve months is naturally without parallel in the annals of the petroleum industry of any other country, and the fact that this great trade in petroleum products has been built up for the most part within the past quarter of a century speaks eloquently for the great perseverance which has underlain the policy of those responsible for the introduction of American petroleum in foreign lands.

"But the main question is as to whether the limit of expansion of the American petroleum industry has been reached, and whether, henceforth, diminishing markets will be found abroad for the multifarious products of American petroleum."

Then follows this most significant paragraph:

...."We have the strongest reason for believing that American petroleum interests will not permanently suffer. America is in the enviable position of having its oil interests guarded upon every market of the world by an organization which scarcely finds an equal in any other branch of commerce. At enormous expense this organization has penetrated to the utmost corners of the earth with oil of American origin, and it is safe to say that the markets it has captured as the result of its wade-awake policy will not readily be conceded to other interests. It is always on the watch for new channels for increased trade, and remembering as we do that the consumption of petroleum products is bound to steadily increase, one cannot but come to the conclusion that no other country will participate in this increased trade so much as our friends in America.

"As a case in point, we would mention the great strides which liquid fuel is making in this and other countries. Here we see the promptitude with which American interests have snatched the opportunity as it presented itself. To-day, the Standard Oil Co. is laying itself out for great things in connection with oil fuel, and, as if to corroborate this statement, we would point to another page of this issue, from which readers will learn of the policy inaugurated by the English branch of this mammoth concern to cater for the liquid fuel trade of this country. Installations are being or have been laid down at convenient spots round the English shores from which ocean-going craft may draw regular supplies, while for the industrial enterprices in hand wherein liquid fuel

may be advantageously employed, elaborate arrangements have been made for supplying any demand. The suggestion of a pipe line from the ocean installations to the interior industrial centres is something quite new to this country, and though hinted at as a possible facility of the future, the mere suggestion shows how serious are the efforts now put forward in order that the American trade in petroleum products may still maintain its proud position.

"Much, on the other hand, can be said for the enterprise of those whose interests are opposed to those of America, yet when the pros and cons are carefully weighed, it will be found that there is ample justification for believing that the future of the American petroleum industry is perfectly safe."

UNITED STATES WILL ALWAYS BE SUPREME IN PRODUCTION, CONSUMTION AND EXPORT TRADE. AN ENGLISH VIEW OF THE WORLD'S PETROLEUM SITUATION.

STANDARD OIL COMPANY SEEDING CONTROL OF WORLD'S FUEL OIL MARKET.

Of the utmost importance to the whole industry, here and abroad, is the highly significant utterance of the Editor of the Petroleum Review of London, England, who practically says that the Standard Oil Company is reaching around the world in a titanic struggle to continue its present control of the refining business and to absolutely dominate the fuel oil market. Pipe lines into the heart of the British Isles are not as far removed, probably, as is intimated. Already the Standard is scheming to eat everything in its way. This is incidentally brought out in the editorial which seeks to look into the future and discover what country will dominate the world's markets. The article, which we have not space to print in its entirety, is as under, dots indicating places where less consequential matter has not been quoted:

CHINESE OIL TRADE WITH AMERICA.

Suggestions regarding the oil trade between China and the United States, especially concerning overcoming the difficulties of packing, are presented in a brief report which Consul-General Amos P. Wilder at Shanghai makes to the Bureau of Manufactures. He advocates the use of steel drums for carrying non-drying oils, and also the regulation of freight rates between New York and China, saying:

"If the New York conference regulating freight rates would fall in line with the steamers carrying oil to Europe, it would put exporters from China in a position to do a large business with American *Pacific* ports."

The British Government is said to be seriously considering the exploitation of the Island of Trinidad in order to secure the necessary fuel oil for use by the British navy. Further information will be secured in regard to this matter and published by us at as early a date as possible.

NEW SOUTHERN PIPE LINE.

The Texas Company has begun the construction of its eight-inch line from Caddo field to Beaumont, the work at present being confined to the south end. Pipe is being received at Shreveport and work will shortly commence at that end. Three gangs will probably be used in this work.

NEW SEMI-MONTHLY OIL JOURNAL.

The *Coalinga Oil Review*, which appears semi-monthly, has been launched and it is a most creditable little paper. It styles itself "The Oil Authority of the Coalinga Field," and can truthfully be said to report in a thorough and accurate manner whatsoever interesting matter comes before the oil public.

NEW OIL MACHINERY SUPPLY FIRM.

Messrs. John Durham, I Anderson and H. M. Thomson, all of McKittrick; Norman McDougal of Los Angeles, and George T. Nighbert of Delano, have organized the Eureka Well Supply Company, with a capital stock of $50,000, of which $46,000 has been subscribed. Their house will be located in McKittrick.

Press communications report that the British admiralty has decided to build an experimental motor-driven battleship, propelled by an internal combustion gas engine. Another report is to the effect that a small type of destroyer, which will carry two or three large guns only, will take the place of the present leviathan known as the "dreadnought" in war, for the reason that it will be able to develop a tremendous speed, by means of oil fuel, which will make the old vessels obsolete. These reports may be accepted with a grain of salt, but they show the trend of petroleum events very clearly; oil as the world's naval fuel is decidedly in the ascendant.

PYRAMID'S OPERATIONS.

The Pyramid Oil Company on section 18, 32-25, has installed a circulator in well No. 1, which was made necessary on account of the shifting sands. Good progress is now being made in the drilling of this well, a depth of 400 feet having been reached.

On section 26, 31-22, the Pyramid Oil Company has reached a depth of 1,400 feet and has encountered some showing of oil. The big sand, which is generally known as the gusher sand in the North Midway district, is expected to be encountered within the next two or three hundred feet.

JEWELL NO. 11 WILL BE FINISHED SOON.

No. 11 of the Jewell Oil Company, section 25, 28-27, in Kern River, will be completed this week and work will then be started on No. 12, which it is planned to spud in by the 15th.—Bakersfield Oil Journal.

OIL IN INDIA.

The British Government is making some rich strikes in petroleum in India. Should the supply be of any great extent it will open a field for manufacturing development in that part of the world, which will further extend the use of the crude and refined product in a region that will not come into competition with the California product.

LATEST QUOTATIONS ON S. F. STOCK EXCHANGE.

Company.	Bid.	Asked.
Alma	....	1 00
Amalgamated Oil	50 00	....
American Petroleum (pfd.)	....	95 00
American Petroleum (com.)	60 00	66 00
Amy	....	1 50
Apollo	....	10
Associated Oil Stock	40 00	41 00
Associated Bonds 5s	....	97 00
Bay City	2 50	....
Blue Moon	10	....
Brookshire	1 60	1 65
California Midway	52	53
California Oil and Gas	....	75
California Seaboard	....	37
Caribou	14 50	15 00
Chicago Crude	....	12
Claremont	1 40	2 00
Coalinga Central	....	75
Columbia	1 15	1 25
Cresceus	....	65
Dabney	....	10
Del Rey	....	1 60
De Luxe	....	1 50
Empire	....	3 00
Enos	1 20	1 27½
Euclid	....	65
Four	....	10
Fulton	....	2 00
Globe	09	14
Graciosa	....	50
Gypsy	50	....
Illinois Crude	....	46
Junction	35	45
Kern River	7 00	....
Maricopa 36	....	3 00
Mascot	2 25	....
McKittrick	15	20
Monte Cristo	2 50	3 00
M. & M.	....	50
Nevada Midway	....	23
New Pa. Petroleum	....	95
Occidental	20	....
Pacific States Petroleum	....	36
Paraffine	....	1 10
Palmer	1 45	1 50
Peerless	....	5 50
Piedmont	....	15
Pinal	5 50	7 00
Premier	80	....
Record	4 00	6 00
Republic	50	53
Sacramento	1 00	....
S. F. & McKittrick	....	28 00
Sauer Dough	....	1 90
Section 25	25 00	30 00
Sesnon	8 00	....
Shawmut	....	50
Silver Tip	1 50	1 90
Sovereign	11 00	....
S. W. & B.	30	....
Sterling	2 05	....
Superior	15	25
Traders	75 00	100 00
Turner	1 25	1 50
Union	....	102 00
West Coast (com.)	9 00	....
Wabash	1 00	1 50
Wolverine	25	....
W. K. Oil Co.	2 50	2 75
Western Union	....	100 00
Yellowstone	....	30

LOS ANGELES QUOTATIONS.
(Not Quoted Above.)

Company.	Bid.	Asked.
American Crude Oil Co.	....	98
Bear Creek Oil & M. Co.	20	30
Central	1 80	....
Cleveland Oil Co.	12⅞	13¾
Consol. Midway Oil Co.	26¼	26½
Continental Oil	....	35
Fullerton Oil	....	5 00
Jade Oil Co.	30	35
Mexican Pet. Ltd. (pfd.)	....	66 00
Mexican Pet. Ltd. (com.)	25 00	25 50
Olinda Land Co. (Oil)	63	64
Perseus Oil Co.	....	32
Piru Oil and L. Co.	17	....
Rice Ranch Oil Co.	....	1 10
Section Six Oil Co.	....	50
Union Provident Co.	99 00	100 00
United Petroleum	100 00	103 00
NON-PRODUCERS.		
Oleum Development Co.	04⅞	....

AGENCY WILL FIGHT ASSOCIATED AND STANDARD—STORAGE CERTIFICATES ISSUED.

The following dispatch was received at the office of this magazine as it went to press, and is given as authentic:

The Independent Producers' Agency has determined to enter the field as a marketer in competition with the Associated and the Standard, and will therefore sell oil at a reduced rate, going as low as 30 cents per barrel at the well if necessary, which they will be obliged to do to meet the competition of the big marketers. This cut-throat war will continue only until the present congestion has been relieved.

The Independent Producers have been notified that the Lakeview Oil Company will be given the use of any pipe line or storage facilities which may remain after guaranteed contracts have been disposed of. The storage committee has been authorized to make arrangements immediately for the construction of 15,000,000 barrels of re-enforced storage.

Oil certificates to be accepted as evidences of oil in storage or as security for loans on the same have been prepared and will be issued during the coming week. These represent an aggregate of 3,000,000 barrels.

The Agency agrees with the bearers of certificates that under the sales contracts with members it has received from them 3,000,000 barrels of "crude petroleum fuel," which is designated as "certificated oil" and which has been delivered to and will be held by the Union for sale. The Agency agrees to maintain the quantity against all diminution except that caused by the monthly sales.

The Union is authorized and instructed to sell the 3,000,000 barrels of certificated oil at the rate of 200,000 per month for fifteen consecutive months, commencing September, 1910. Sales will be on the same terms and conditions and the same price and the proceeds subjected to same charges and deductions as all other oil sold for the Agency under marketing agreement of June 24, 1909.

On the 20th of each of the fifteen months, commencing November 20th, the Union is required to deposit the equivalent of not less than 35 cents per barrel for 200,000 barrels sold during the second preceding calendar month and otherwise "equal to said net proceeds derived from the sale of said oil for said month." This money is to be held by the bank solely for the payment of the installment coupons attached to certificates.

The issuance of these certificates means a struggle to keep up the price of oil at the wells to the figure of 35 cents per barrel, as against the efforts of the Associated and Standard to fix the price at 30 cents. So far as the 3,000,000 barrels are concerned, that will be the established price, and it will not be so much of a loss to the independent producers, for all they received last month from the Union for the oil sold was 38 cents at the well, as against 42 cents for the preceding month. It may be, however, that some of the producers, hard pressed for money, may discount these certificates for 30 cents; but that is expected to be in only rare instances.

It is a great relief during the present congestion of stocks.

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ALL SIZES INTERCHANGEABLE WITH OTHER STANDARD MAKES

Standing over the seething Lakeview cauldron. From left to right: Messrs. H. A. Blodgett, J. M. Dunne, Gifford Pinchot, Parker Barrett, Amos Pinchot, Frank F. Hill, C. A. Barlow, E. A. Montgomery, F. H. Hall, F. J. H. Merrill, Sidney Norman, Roy Browne, J. C. Payne, Geo. E. Whittaker and Wallace Morgan.

CALIFORNIA DERRICK

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ORIGIN OF PETROLEUM

SEVENTH PAPER

By PAUL W. PRUTZMAN, Geologist, Chemist and Author

California's brilliant oil expert, whose writings and works are everywhere recognized in oil and scientific circles.

Anyone who has had occasion to compare the analyses of a large number of tars from coal and shale, must have noted the resemblance of some of these bodies to certain petroleums, and also that, notwithstanding the very wide range of variation in their constitution, they exhibit certain very definite relations and a regular sequence in their composition, depending on the two factors, raw material and distilling temperature.

We would naturally expect to find the decomposition products from different raw materials varying considerably in their make-up, but with one very important exception this expectation is not fully realized. The dry coals do, it is true, give denser and more aromatic tars than the fusing coals, and these than the cannels, while the most recent lignites give tars with the largest percentage of aliphatic hydrocarbons. Yet these differences are so little marked, as compared with the differences due to varying distilling conditions, that I think it perfectly safe to say that the difference in quality between two tars from the most widely varying materials which could be classed as coals, but produced under the same conditions, would be very much less than the variation between two tars produced from the same material, but under the most varying conditions. In other words that, taking the whole class of tars produced from coal, shale and lignite, the factor of raw material has less influence on the composition of the tar than the factor of distilling conditions.

The one important exception to this rule is in regard to the distillation products from unaltered wood. The tars from the most recent and least altered lignites and brown coals consist of the same groups of hydrocarbons found, in varying proportions, in all the coal and shale tars, but once we pass the line to entirely unaltered woody fibre, we find a new group of hydrocarbons, the terpenes, making up a very large part of all wood tars, and practically absent in the coal and shale tars. This long seemed to me an insuperable objection to the theory that petroleum is formed from vegetable residues, but I now believe that a very plausible explanation may be found for the absence of the terpenes from petroleums, and one which strengthens rather than weakens the claim for relationship in origin between the tars and the petroleums. This point will be brought up in a later paragraph.

Two facts have tended to obscure the similarity between the petroleums and the tars. The first is that, in the two countries (Scotland and Germany) where the tars most nearly identical with petroleum are produced, crude oil is not found and the origin of petroleum is hardly discussed, while in America, where the source of oil deposits is a matter of live interest, the tars commercially produced are such as bear the least resemblance to petroleum in either appearance or constitution.

The second fact which has tended to obscure this relationship is that while all petroleums consist in large part of the hydrocarbons, the tars usually contain a large proportion of other constituents, and as these have, as a rule, very marked physical properties, and in a large measure determine the commercial working of these mixtures, the very close resemblance in the essential part (that is, the hydrocarbons) in two mixtures, may be entirely covered up and hidden by the great difference in its nonessential constituents, and in color, odor and other sensible properties. These points also will be discussed later, and an explanation offered for the absence of these non-hydrocarbon constituents in the petroleums.

Analysis of tars and petroleums may be made in two ways —for commercial use and for chemical research. The first

sets forth the sensible properties of the substance, and divides it into such fractions as have a present or possible market value. The second seeks to determine the ultimate constituents of a mixture, or such groups of constituents as have a distinct chemical relationship. In the following paragraphs the analyses are given in both ways, first a very brief commercial or proximate analysis, designed to identify and describe the material, followed by an anaylsis according to groups of hydrocarbons, aiming to show its relationship to the other materials discussed.

Out of a rather large collection of analyses, principally made in my own laboratory, but in part taken from printed works, I have selected eight tars and six petroleums which illustrate the points desired in the most lucid manner. It should be noted that the order in which these analyses are given is not fortuitous, but follows a definite sequence, which will later be described and illustrated by a diagram.

Bituminous coals are distilled in great quantity for the production of illuminating gas, and the tars from this process are at the end of the scale the furthest removed from petroleum. The coal is charged into fireclay retorts, already heated to a white heat, and distilled as rapidly as possible. Any coal may be used, but in general a clean coking or semi-coking coal is used, as being the most profitable. The yield of products from the coal is about as follows:

1—Distillation of Bituminous Coal—High Heat.

Illuminating Gas.....17% or 10,000 feet
Tar .....5% or 10 gallons
Gas Liquor (solution of ammonia salts).....8% or 22 gallons
Coke .....70% or 1568 lbs. per ton

The tar thus produced is thick and black, and has a strong aromatic odor and burning taste. Its proximate analysis is about as follows:

2—Proximate Analysis—High Heat Coal Tar.

Specific Gravity (water—1.00) 1.21.

Benzole or Naptha.....		2%
Creosoting Oil		
Tar Acids (Phenols).....	4%	
Tar Bases (Pyridines, etc.).....	1%	
Naphthalene	6%	
Liquid Hydrocarbons	13%	
Anthracene	1%	
	—	25%
Pitch		
Pure Bitumen	60%	
Free Carbon	13%	
	—	73%
		100

The benzole fraction consists of benzene, toluene, xylene and other members of the benzine group. It is the foundation of the color industry, and is used for many other purposes, well known to every student of organic chemistry. The creosoting oil fraction is used just as it comes from the still for preserving timber. The tar acids or phenols are a mixture of carbolic acid, cresylic acid and higher homologues, and in the pure form are used as antiseptics and in the manufacture of picrate powders. Napthalene is used to some extnet in the color industry, and as an antiseptic. The liquid hydrocarbons have no value except in the creosoting mixture; they are too heavy for burning oils, and have too little viscosity for lubrication. Anthracene is used in dye manufacture. Coal tar pitch is very similar to asphalt in appearance and properties, but is used in a rather different manner.

Now, before considering the chemical constitution of this mixture, some of the fractions must be eliminated, for the following reasons: First, the phenols must be taken out, as they are completely soluble in water, and therefore have no bearing in the present case. We are considering the tars solely in their relationship to a possible origin of petroleum, and it must be evident that under the conditions to which petroleum is subjected during its generation, transportation and storage in the earth, all elements soluble in water would be rapidly washed away and lost. The fact that the petroleum which we find contains no water soluble constituents follows necessarily from these conditions, and we have no means for even guessing what percentage of such constituents it may originally have had, and so, having no basis for comparisons, we must eliminate these water soluble elements from the artificial mixtures considered The basic bodies are taken out for the same reason—they are soluble in water

The free carbon we take out, because it is due to coke dust carried over mechanically by the exhausters from the retorts, and therefore is not properly a part of the tar itself. And finally we eliminate the pitch, or pure bitumen, because we know absolutely nothing of its constitution, because the oils obtained from it by distillation are, in all probability, not contained in the tar itself, but due to destructive distillation of the bitumen, and finally because the proportion of bitumen does not depend necessarily on either the raw material or the temperature, but varies to a considerable extent with percentage of sulfur and other extraneous conditions.

In all the following analysis, therefore, any elements soluble in water or weak alkalis, as well as the bituminous materials, are eliminated before dividing the material into groups of hydrocarbons, and 100% is taken to represent the total hydrocarbons contained in the mixture.

3—Analysis of Hydrocarbons—High Heat Coal Tar.

Paraffins		Trace
Olefins		Trace
Acetylens		Trace
Cycloparaffins and Benzenes.....		23%
Probably only a trace of cycloparaffins.		
Napthalenes and Anthracenes		
Solid Napthalene.....	27%	
Liquid Methyl-napthalenes	45%	
Anthracenes	5%	
	—	77%
		100%

Or, Aliphatic bodies, a trace, Aromatic bodies, 100%.

In the earlier days of the coal gas industry, and up to late years in some of the smaller towns, coal was distilled in cast iron retorts, which could not safely be run above a full red heat. The same class of coal was used as at higher heats, but the production of gas was smaller, the ammonia liquor was stronger, and the coke was softer and of a blacker color. The tars thus produced were thinner than high heat tar, but had the same color and odor.

4—Proximate Analysis—Medium Heat Coal Tar.

Specific Gravity (Water—1.00) 1.18.

Benzole or Naptha.....		2%
Creosoting Oil		
Tar Acids (Phenols).....	3.8%	
Tar Bases (Pyridines, etc.).....	1.0%	
Napthalene	2.0%	
Liquid Hydrocarbons	12.6%	
Anthracene	0.6%	
	—	20%
Pitch		
Pure Bitumen	68%	
Free Carbon	10%	
	—	78%
		100

The commercial products from this tar are the same as those from the preceding sample.

Continued on page 28

PRODUCTION FOR AUGUST, 1910, IN DETAIL.

Owing to a curtailment by a number of operators in the Valley oil fields, the large increase in production which was looked for did not materialize. The Midway field was the only field which made a considerable gain for August as compared with July, the increase being approximately 1,200 barrels per day, while McKittrick increased only 9,000 barrels during the month. Kern River, Coalinga and Maricopa show a heavy decline in production. A tabulated comparative report of production in all the fields during July and August follows:

San Joaquin Valley.	July.	August.
Coalinga	1,688,959	1,363,147
Kern River	1,118,278	1,101,370
Midway	924,000	1,283,000
Maricopa	1,095,000	825,900
Mc Kittrick	474,779	483,700
Total Jan Joaquin Valley	5,301,016	5,057,117
Southern Fields.		
Salt Lake-Sherman	285,738	291,000
Los Angeles City	58,080	39,000
Whittier-Coyote	89,925	98,200
Ventura	36,162	45,000
Newhall	12,145	15,400
Fullerton-Brea Canyon and Puente	417,894	440,000
Total Southern Fields	879,044	928,600
Coast Fields.		
Santa Maria, Lompoc and Cat Canyon	713,200	750,000
Arroyo Grande	1,000	500
Watsonville	1,500	1,200
Summerland	5,305	5,742
Total Coast Fields	721,005	757,742
Grand Total All Fields	6,901,965	6,743,159
Daily Average All Fields	222,644	217,251.26

FIELD OPERATIONS DURING AUGUST, 1910, IN DETAIL.

Following are the field operations during August, as given by the report of the Standard Oil Company:

Field—	Rigs comp.	Wells drg.	Wells comp.	Wells abd.
Kern River	27	46	21	1
McKittrick	3	19	2	..
Midway	45	251	14	..
Sunset	24	63	8	1
Coalinga	34	142	20	..
Watsonville	..	2	..	..
Arroyo Grande	..	3	..	..
Lompoc	..	11	..	..
Santa Maria	2	37	..	..
Summerland	1	2	..	..
Santa Paula	4	36	3	2
Newhall	..	7	2	..
Salt Lake	..	20	1	..
Los Angeles	..	..	..	2
Whittier-Coyote	..	15	..	..
Puente	..	2	..	..
Fullerton-Brea Canon	5	47	2	..
Repetto	1	1	..	..
Totals	146	704	74	6

REPORT OF PRODUCTION FOR FIRST EIGHT MONTHS OF PRESENT YEAR.

The total production for all California fields for the eight months of the present year ending August 31, amounted to 50,236,018 barrels and shows a gradual increase since the first of the year. This is an average of 6,279,500 barrels per month, which if maintained for the next four months will give a grand total for the year 1910 of 75,594,000 barrels. But it is more likely to be increased and the indications are that the year will show a credit of not less than 80,000,000 barrels. Following is the output by months for the present year to August 31:

	Barrels.
January	5,182,889
February	4,469,650
March	5,529,900
April	6,355,000
May	6,995,825
June	7,126,544
July	7,207,890
August	7,368,320
Total	50,236,018

This shows a loss from the entire twelve months of last year of only 6,536,832 barrels, the total output in 1909 being 56,772,850 barrels, at least 25,000,000 barrels less than the estimtaed output for 1910.

STANDARD OIL COMPANY'S RUNS AND SHIPMENTS

From September 1st, 1909 to August 31st, 1910

The following shows the Standard's pipe line runs and shipments month by month from September 1, 1909, to August 31, 1910:

Month.	Runs.	Shipments.
September	977,799	977,799
October	996,033	996,033
November	936,462	916,928
December	964,203	1,066,469
January	1,058,394	998,484
February	1,036,810	979,629
March	1,381,210	1,097,686
April	1,474,661	924,237
May	1,425,936	929,812
June	1,211,350	901,505
July	1,222,608	1,022,793
August	1,200,919	927,188
Total	13,889,885	11,733,937

RECENT PATENTS.

The following patents recently granted of interest to the oil trade are reported expressly for the California Derrick by J. M. Nesbit, Patent Attorney, Park Building, Pittsburg, Pa., from whom printed copies may be procured for 15 cents each:

Rope knife, G. A. Spang, Butler, Pa., 969,571.

Apparatus for cutting well-pumping cables, G. A. Spang, Butler, Pa., 969,755.

Pipe joint (2), J. R. Tanner, Pittsburg, and D. B. Banks, Baltimore, Mr., 969,422 and 969,423.

Pipe puller, Julius Anderson, Eau Claire, Wis., 969,508.

Shoe guide for well casings, A. C. Graham, Oilfields, Cal., 970,812.

Well-boring machine, P. A. Bouchet, Merced, Cal., 970,880.

DIVIDENDS FOR SEPTEMBER.

Total dividends paid by companies listed on the San Francisco Stock Exchange now amount to over $35,000,000. There was a falling off in September from the August amount as several companies decided to pay quarterly instead of monthly, owing to the difficulty of moving their oil during the last two months. Following is the list of dividends, the number of each company's payment, when paid an dthe amount per share, for September:

Company—	No.	Date.	Amt.	Total.
Alma Oil Co.	16	7 15 10	$ .03	$ 182,400.00
Amal. Oil Co.	32	9 15 10	1.00	1,600,000.00
Amer. Pet., pfd.	15	9 1 10	.66	273.649.05
do. common	15	9 1 10	.66	1,470,758.20
Apollo	2	3 20 05	.01	4,000.00
Associated	4	3 1 07	1.50	1,548,368.54
Bay City	7	8 15 10	.10	145,000.00
Brookshire	45	1 1 10	.01	442,500.00
Caribou	65	9 15 10	.25	821,586.24
Chicago Crude	2	3 25 07	.00½	15,000.00
Claremont	64	9 28 10	.02	385,000.00
Coalinga Pacific	18	12 23 09	.10	107,250.00
Columbia	50&51	9 25 10	½&½	334,752.59
Del Ray	5	9 1 10	.00½	19,637.50
Empire	5	9 30 10	.01	10,000.00
Esperanza	26	12 27 09	.02	49,450.00
Euclid	42	8 1 10	.01	141,500.00
Four Oil	68	2 25 10	.01	213,000.00
Globe	21	4 1 10	.01	87,000.00
Gypsy	4	8 4 10	.07	40,000.00
Home	A23	9 20 10	.02	486,000.00
Homestake	47	7 15 10	.10	79,250.00
Illinois Crude	40	6 1 10	.01	94,000.00
Imperial	71	7 18 10	8.00	4,000,000.00
Junction	8	6 1 10	.01	20,000.00
Kern River	46	9 1 10	.10	112,000.00
Linda Vista	22	8 5 10	.01	80,608.50
Lucile	16	12 20 09	.10	42,727.04
Mascot	8	9 20 10	.02	50,000.00
Mecca	6	7 15 09	.03	71,825.00
Monte Cristo	65	9 20 10	.10	690,000.00
Mountain Girl	1	8 4 10	.02	7,000.00
Mexican Pet.	49	9 1 10	.01	3,499,500.00
Nevada County	3	10 13 08	.04	40,000.00
New, Penn. Pet.	4	9 15 10	.01	20,000.00
Palmer	16	9 25 10	.01	358,481.20
Paraffine	11	9 15 10	.01	33,000.00
Peerless	77	9 20 09	.06	801,000.00
Piedmont	7	5 9 10	.01	26,877.30
Pinal	61	9 30 10	.10	976,843.50
Premier	4	7 20 10	.01	40,000.00
Producers	2	9 22 10	.50	120,000.00
Record	15	9 15 10	.07½	100,000.00
Rice Ranch	21	6 10 10	.01	108,000.00
Royalty	20	9 20 10	.33	29,400.00
S. F. & McK.	30	9 1 10	.30	445,000.00
Sauer Dough	55	9 21 10	.30	553,213.50
Section 25	6	8 26 10	.25	60,000.00
Sesnon	12	9 6 10	.07	146,000.00
Silver Tip	4	2 25 10	.10	30,000.00
Sovereign	19	9 1 10	.01	100,000.00
S. W. & B.	7	9 10 09	.01	41,470.00
Sterling	23	3 15 10	.12½	776,250.00
Superior	12	7 26 10	.01	62,500.00
Thirty-three	60	8 6 10	4.00	1,090,000.00
Traders	17	5 15 10	1.00	209,146.50
United Pet.	100	9 20 10	.50	2,421,212.93
Union	170	9 20 10	.50	7,117,133.15
United Oil	4	9 10 10	.01	47,255.24
Wabash	31	7 19 10	.20	189,000.00
West Coast pfd.	6	9 1 10	2.00	124,896.00
West Shore	47	12 21 08	.05	235,000.00
Western Union	....	8 21 07	2.00	484,951.00
Yellowstone	1	.... 5 08	.01	8,000.00

Total for September	$ 669,010.00
Total to date	35,385,514.00

GENERAL EXPORTS INCREASE.

A general increase in the exports from the United States was noted in August. Total amount of oils exported during the month reached 131,473,346 gallons, an increase of 11,796,974 gallons over August, 1909. The increase noted extended to all items save crude and residum. Crude exported during the month amounted to 9,348,516 gallons, a decrease of 1,661,199 gallons from August, 1909. Napthas increased from 2,256,343 during August, 1909, to 9,649,079 during August, 1910; an increase of 7,382,736 gallons and $519,443 in value. Increase in illuminating exports amounted to 3,431,562 gallons, valued at $142,578. The increase in lubricating exports was noteworthy, amounting to 3,265,396 gallons, valued at $428,121. Residum declined 631,521 gallons, valued at $133.

The total mineral oils for August last was 131,473,346 gallons, valued at $8,475,977 as against 119,676,372 gallons valued at $7,630,948 for August last year, an increase of 11,796,947 gallons and of $845,029.

While the increase in August is most satisfactory to contemplate the first eight months of the year are not as encouraging from the viewpoint of the exporter, the exports having fallen off no less than 38,946,006 gallons valued at $5,463,900, a direct result of the tariff as noted in earlier issues of this magazine. It is to be hoped that August ushered in a period of greater prosperity for the exporters.

EXPORTS FROM SAN FRANCISCO DURING AUGUST, 1910.

Total exports of refined oil from San Francisco in August were 60,142 gallons, valued at $11,830. This means that for the time being the foreign trade ceased almost entirely. In July the exports of refined goods were 3,157,864 gallons, valued at $131,601, or more than fifty-two times as much in amount and more than ten times as much in value. In August, 1909, the shipments of refined goods were 5,299,121 gallons, valued at $240,528, or more than eighty times as much in amount and twenty times as much in value as in August of this year. The refined exports in August were as follows: Naphthas, 3,896 gallons, value $708; illuminants, 21,908 gallons, value $2,828; lubricants, 34,338 gallons, value $8,244; residum, none.

During August 142,026 barrels of crude, valued at $85,283, was shipped from San Francisco to foreign countries. During July the shipments were 192,752 barrels, valued at $124,145; August decline, 50,726 barrels.

These shipments were more than five times those of Port Arthur, Texas, which amounted to only 25,626 barrels, but the value of this was larger per barrel, the total being $38,618. San Francisco's exports exceeded New York's by 103,809 barrels. The value of New York's shipments, however, was $112 more than San Francisco's.

August, 1909, San Francisco's exports of crude were 78,702 barrels, valued at $54,200, showing an increase this year over August of last year of 63,324 barrels in amount and in value of $31,033.

LA BELLE TO GO DEEPER.

The La Belle Oil Company, on Section 4-32-23, is to sink its well to greater depths. It was finished at 2,967 feet, but the production was considered unsatisfactory.

Most Important Oil Deal in Many Years.

L. P. ST. CLAIR, President of the Independent Producers Agency, who after many months' labor, succeeded in aligning all the great factors in the producing and marketing of oil in this state, with the single exception of the Standard Oil Company, into one harmonious association.

After three months' negotiations, during which time a successful conclusion was time and again despaired of, the Independent Agencies, the Union Oil Company and the Associated Oil Company have joined hands for a period of three years to place the oil industry in this state upon an absolutely firm foundation. The coalition is the greatest piece of news for producers and consumers alike which has reached them for years. Its benefits to the whole industry can, at this time, hardly be exaggerated, according to the opinions of those best informed as to the present oil situation. No less than 80 per cent of the oil produced in California will now be handled by the one selling agency.

The contracts binding the parties to the deal were signed on the fourth inst. in San Francisco. L. P. St. Clair acted for the Independents and Union Oil Company, and W. S. Porter acted for the Associated Oil Company. Briefly stated, the salient features of the new order of things are as follows:

The Associated Oil Company will act as marketer for the Independent Oil Producers' Agency for a period of three years from October 4, 1910. A commission of 10 per cent will be paid the Associated for its services.

The Associated agrees to sell all of the Independent's unsold oil now in storage at the most advantageous price obtainable until the present stored supply is exhausted.

The Union-Independents retain all their present business and the Associated retains all its present business. The renewal of all the Independents existing business remains in the hands of the Union Oil Company, and to the latter is guaranteed also the exclusive right to sales on the West Coast of South America.

All new contracts are to be submitted by the Associated for approval to the Agency-Union. When approved, the Associated will assign them to the Agency until such time as the total of the Agency's business and that of the Associated are equal; from then on the business is to be equally divided.

The contract may be terminated by either party upon six months' notice.

The Associated shall, according to the contract, purchase from the Union-Independents any oil needed by the former for application to its own business as purchasing agent for other concerns, inexcess of its own production.

Attached to the contracts are memoranda submitted by each of the parties showing the contracts now held by each, and these memoranda will be the basis of the division of future business as provided by the first of the two contracts.

There is nothing in either contract which fixes the price of oil on future sales.

Nothing in the contracts prevents the Independent agency from receiving new oil companies as members, and it is stated on authority that there is not likely to be any change in the past policy of the agency in this respect.

The contracts do not provide for the interchange of storage and transportation facilities between the two parties, but it is understood that this will be one of the practical effects of the new management, and that hereafter the Producers' and Associated pipe lines, the Producers' and Associated storage, and the Union and Associated steamers will be used indiscriminately to the best advantage, irrespective of the origin of the oil to be handled

At a recent meeting of the executive committee of the Agency President St. Clair was given full power to enter into an agreement on the lines of the present contract. There has been no deviation from the form approved by the committee, and there accordingly is no necessity for ratification. In all probability, however, a meeting of the directors of the Agency will be called to hear the contract read and give it their formal sanction.

The pracitcal effect of the contract purports to be to check the growth of the Associated as a marketing concern until the Union and Independent combination overtakes it, thereafter to divide the business equally between the two parties, to secure for the Independents the benefit of the greatest possible economy in the handling of their oil, and the benefit of the full market price, whatever it may be, to do away with price wars, and to greatly facilitate the extension of the oil market, and to produce an immediate outlet for a great amount of the surplus oil now on the Agency's hands.

Broady speaking, the effect of the contracts is almost the same as though the Associated were to become part of the Agency. Also, the Associated, being the purchasing agent for the Southern Pacific, the agreement practically aligns the railroad with the Agency in the matter of the handling and distribution of oil. These new arrangements, together with the arrangements already effected with the Union, the American Oil Fields and other Doheny companies, the Barneson and other large oil interests, make the oil business of this Coast at the present time thoroughly systematized.

The signing of the contract was probably the consummation of the biggest deal in point of capital and business involved ever negotiated on the Pacific Coast. Every big element except the Standard Oil Company is represented in the new order. By far the larger part of the State's production is now under the control of the Associated-Union-Agency combination. The capital involved is enormous. The Associated is capitalized for $40,000,000, the Union for $25,130,000 and the capitalization and actual worth of the remaining interests is enormous, the combined holdings of the companies in the Agency being worth at the least $100,000,000. The effect of the combination was immediately apparent in the stimulated buying of stocks and properties. The fact that there will be no more cut-throat competition places all oil holdings connected with the combination upon a most enviable basis, and one which is considered to be absolutely unassailable.

It is hoped that the deal ushers in a period of unparalleled prospertity.

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A JUST DECISION—NO FAVORITISM FOR OUTSIDE CORPORATIONS.

The State Supreme Court has decided that the holders in foreign corporations operating in this State are as amenable to the laws of California as though the corporations were organized under the laws of this State. "Non-assessable" stocks are assessable in California, if the operations of the corporation lie within California's boundaries. Stockholders here are liable for their proportionate share of corporation indebtedness. In rendering the decision to this effect, the Court said the following:

"There is no injustice or hardship in this result. The law of this State declares in express terms that 'the liability of each stockholder of a corporation formed under the laws of any other State or Territory of the United States, or of any foreign country, and doing business within this State, is the same as the liability of a stockholder or a corporation created under the constitution and laws of this State.'

"This statute carries out the constitutional mandate that foreign corporations shall not be allowed to transact business within this State on more favorable conditions than are corporations organized under the laws of this State (Const. Cal., Art. XII, Sec. 15).

"These provisions existed when this corporation was formed for the express purpose of doing business in California. The stockholders seeking to avail themselves of the permission granted by this State to foreign corporations to do business here, knew, or should have known, the terms upon which the privilege was tendered. They should not be allowed to take advantage of the benefits afforded by our law, at the same time repudiating the accompanying burdens."

EXCERPTS FROM THE GIFFORD PINCHOT SPEECH BEFORE THE AMERICAN MINING CONGRESS IN LOS ANGELES.

"The fundamental principle of Conservation is that the natural resources belong to all the people of the United States and should be protected for their benefit. In the past the few have been benefited. The people of the nation wish to change this condition, and they will. * * * The object of Conservation is not to tie up developemnt, but to prevent the present generation wasting the natural resources. The coming generations have a right to some of the benefits. * * * He is an enemy to both State and Nation who picks differences between them. The Conservationists are striving for the good of all and should receive the support of all the people, and National control or State control should not enter into the controversy. What is needed is both a National Conservation Commission and a State Conservation Commission, and they should work together. In this way all the resources could be handled equitably and harm would be done to no man.

"The forest service has never attempted to interfere with mining, but as a fundamental fact has endeavored to beat the man who was trying to get control of land under pretense of mining."

Speaking of the leasing system, Mr. Pinchot said:

"Conservation must not and will not interfere with the prospector. Any system that did so would not be sound. All the conservationists are trying to do is to make the prospector's work easier, to facilitate and not check his progress.

"Now, concerning oil: First, men who have made bonifide locations previous to withdrawal—last fall—and who have been developing in good faith should get their patents.

"Second, oil lands not now located should remain so. Legislation should be made for the development of these lands, say for three years, and if oil is found the Government should give a permit to develop for a period of many years, say for twenty-five years, and the operator should pay a royalty, but small enough as not to hamper his development of the land.

"The Government will not be doing its duty unless it attacks title of the Southern Pacific grants through legislation or otherwise, and restore these lands to the people of the United States. Before you condemn conservation find out what the friends of conservation assert and not what enemies to it declare or dispute."

DISCUSSION OF "THE FEDERAL GOVERNMENT AND THE OIL INDUSTRY" AT THE MEETING OF THE AMERICAN MINING CONGRESS.

After the subject matter had been introduced, the first speaker was Congressman S. C. (should it not be S. P.) Smith of Bakersfield, Cal. Mr. Smith threw the weight of his oratory against the conservation idea, pointing out the heinousness of the leasing system, or the system whereby the operator would be paid a percentage by the Government. Mr. Smith upheld the time-honored method of acquiring lands from the Government by location and patent. He was for conservatism. Mr. Smith concluded his address amidst great applause, and sat down. Charles P. Fox, editor of the California Oil World and president of the California Oil Men's Association, noted in our last issue, arose and proceeded to request that the subject of conservation be no further discussed by the Mining Congerss. It was his idea, and a thoroughly justifiable one if only given enough time for proof that the oil men of California will work out their own problems without outside assistance. The discussion proceeded despite Mr. Fox's desire.

Ex-Congressman C. A. Barlow of Bakersfield, Cal., opposed conservation, reading a resolution recently passed by the Kern County (California) Board of Trade, of which he is chairman, pointing out the simple solution of the problem by slight amendments to the present laws.

Mr. S. C. Graham of Los Angeles strongly favored conservation, and believes in such legislation as would secure for the Government as large a revenue as possible consistent with the prevention of monopoly. Mr. T. A. O'Donnel of Los Angeles favored a return to the laws that have been in force for the past thirty years, characterizing as ruinous the handling of affairs of the West from Washington by the leasing system.

On the whole there was very little unanimity of opinion, and seems likely to be little more unless a great number of people engaged in the oil business change their present attitude toward the present situation. The subject is such a great one and embraces so many divergent interests that there seems little reason to expect that laws satisfactory to all can be agreed upon.

BRAD OIL COMPANY.

The Brad Oil Company's well on Section 15-32-23, Midway, appears to be a large one, having thrown oil all over the derrick at a very recent date.

THE CHAOTIC CONDITION IN THE OILFIELDS WHICH "CONSERVATION" HAS BROUGHT ABOUT.

The policy of Conservation has brought upon the country a great many problems, but we think we can truthfully say it has created no greater disturbance anywhere than in the oil fields of this State. Questions, questions innumerable, confront the carrying out of this policy in California.

Can the disposition of the public domain by departmental heads in Washington, who know nothing about conditions here except what they have read in per-fervid attacks upon Conservation in the oil fields or equally ardently written praises of and for the Conservationists, be just, or to the benefit of those most directly interested in the lands in question, the developers of same? Can their policy result in any benefits to the people; and if so, to **what** people? Is the Southern Pacific Railroad to derive the sole benefits of Conservation as it is now in force, or may not a few of the hardy prospectors who have proved up their 160 acres be allowed to benefit by their work?

Chaos! That is the word which best represents the condition of the minds of oil men whose lands are in the balance. They do not know and cannot know exactly where they stand.

In regard to the ownership of the land-grant oil lands in possession of the Southern Pacific, a fierce controversy rages. Gifford Pinchot advocated that the Government proceed against the S. P. until it had secured all the lands which that company now holds as non-mineral bearing; Attorney Frank H. Short of Fresno, the very well-known attorney whose influence is wide and whose head is level, says that a successful attack upon the Southern Pacific's title to these holdings will bring about an almost incredible disaster to those who have purchased from the S. P. upon the strength of its title. And, its title is **WEAK**; it is even now being questioned in a suit pending in the Los Angeles Federal Court. What is to be done in case the railroad's title is found defective? Are all those who purchased with the idea that they were parties to a bona fide sale to be ousted? Shall the Government condemn and confiscate the property of innocent persons; or, shall there be a sweeping decision taking away the thousands of acres of lands granted to the S. P. and giving an absolutely good title to the purchasers? It is a big subject, and one which it will take the greatest judgment, temperance of character and wisdom to decide fairly.

To take from one and give to another is a peculiar brand of justice. Miners are "dead against" Conservation and so are most of the oil operators. Conservation in its present state conserves only for the S. P., in the Midway fields, unless the Government should start operations immediately upon its own sections.

As we have stated, the oil men are hopelessly divided upon the subject of Conservation. One man wishes one thing, another wishes the opposite. How can the administration tell what is best for the oil men of this State when sentiment is so utterly divided that absolutely no harmony can be obtained? It looks to us as though the oil men had better get together and work with one will for one purpose, giving way to each other in some things in order to accomplish anything; otherwise the interests with which they are as a whole at variance will be directly benefited by their strife and they themselves will get nothing.

THE CONSERVATION PROBLEM FROM THE VIEWPOINT OF PRESIDENT E. R. BUCKLEY OF THE AMERICAN MINING CONGRESS—A BRIEF EXTRACT FROM HIS SPEECH.

At the recent meeting of the American Mining Congress, held in Los Angeles, President E. R. Buckley made four points in regard to the "Conservation problem" which present most clearly the stand taken by mining interests. President Buckley's speech in full would take up several pages; but as regards oil land legislation and Conservation of oil-bearing lands his viewpoint is contained in the following:

"Four things appear to be perfectly clear in a consideration of the Conservation problem: First, as mining men we cannot afford to have the Government enact legislation which will make the occupation of mining more hazardous than it is, either respecting the protection of life, or the investment of money. Second, that nothing shall be done that will in any way retard the development of our manufacturing industries that depend upon the products of the mines for their business. Third, that everything possible be done to increase the percentage of metals that can be recovered from the ore bodies and from deposits of coal, oil and gas. Fourth, to bring about as quickly as possible the use of substitutes for the present sources of power and for the metals which are supposed to be limited in quantity. There should be the fullest development of our mineral resources, under such Federal or State co-operation and regulation as will insure the maximum elimination of waste, it being agreed that our mineral resources should be exploited with intelligence and in an upright manner.

"The attention of the public has been directed especially to the consumption of the mineral fuels, for upon these, perhaps more than upon anything else, depends the future of our manufacturing, transportation and commerce. It is evident that it requires a constantly increasing quantity of power to maintain manufactures, transportation and commerce; and as long as this power is supplied by coal, oil and gas, legislation which either increases the price of these or removes them from exploitation, can lessen their consumption only by increasing the price of manufactured commodities or by lessening the volume of business."

As against this idea, consider the following speech of Mr. Gifford Pinchot, former Chief Forester of the United States, in regard to "Conservation." Mr. Pinchot having traveled through the oil fields, his opinion was eagerly awaited:

OIL AND GAS DEVELOPMENTS IN ONTARIO, CANADA.

Under date of October 7th, we received the following from our Eastern correspondent:

"A considerable amount of boring for gas and oil is being done on the shores of Lake Erie. Since the large flow was found near Port Burwell a short while ago, the activity has increased and at present a large gang of men are there preparing to drill right in the village, and they expect to strike some good wells. At Port Bruce, ten miles distant, a number of wells have been bored and have shown good results, one having a pressure of 90 pounds. What is going to be done with the gas when obtained is uncertain; the borings which have yielded gas have been plugged up as far as possible, and the companies are paying the owners of the land a certain amount a year as an option. The gas has been discovered after sinking only 6 feet into the rock at some places, while one well that was bored and plugged over two years ago went to a depth of 1,300 feet. The latter has water flowing from it all the time, and a percentage of oil comes up with the water. The water is very cold and resembles the much advertised mineral water in taste. Work on the natural gas pipe line which is to be laid down Tilbury East gas field, near Chatham, to London, will be started in May, according to a despatch from Chatham. The pipe for the line has been distributed a great part of the way, especially along the route of the Pere Marquette line, from where it will be taken to the site of the proposed trench in which the pipe will be laid. About $600,000 worth of pipe will be used on the line.

LAND SALES OF RECENT DATE

The largest land transfer of the month past was the purchase by Rear Admiral R. D. Evans, U. S. N., retired, of the Yellowstone, Mascot and Premier properties. This sale is treated in another column.

MIDWAY UNION SELLS 400 ACRES.

The Midway Union Oil Company has sold 400 acres of land in San Emidio (the lawer end of the Sunset field) to E. P. Gable and associates of Pittsburg at a price said to be $13,000. Ralph Arnold, M. V. Carpenter and H. A. Green have resigned as directors of the Midway Union, and have been succeeded by Messrs. C. P. Finney and R. S. Shoup of Los Angeles, and R. H. Gibson of Cincinnati, president of the Indian Refining Company, which means that the Indian has bought the control of the Midway Union. In regard to the sale a circular was sent out to the stockholders which says that Eastern parties have agreed "to purchase at cost price all material placed on and so far purchased for the development of the San Emidio holdings," and to assume the contract to drill five wells made by the Midway Union which would have required an expenditure of about $200,000. The Midway Union retains 100 acres and has an option to purchase 200 more at $1,500 an acre. The 100 acres cost $6,125, and will be thoroughly tested by the Eastern people.

CAPTAIN BARNESON BUYS ESSEX PROPERTY.

The Essex Oil Company's property on the Maricopa "flat," located on section 6, 11-23, close to the Lady Washington, La Blanc, Buick and Yellowstone Oil companies, has been sold to Captain John Barenson, head of the Esperanza Oil Company, for a price said to be $300,000. The property consists of the S. W. ¼ of the N. E. ¼ of section 6, 11-23. It brought in a well recently which is of good dimensions as a producer, and which, although thought to be a very big well, possesses the distinction of being under absolute control—something unusual in gushers nowadays. The property is also well and carefully kept, there being bunk houses, a boarding house and all improvements desirable. The well came in with a flourish last spring and was finished at a depth of 2,575 feet with 4½-inch casing.

TEPUSQUET OIL COMPANY MAKES LARGE PURCHASES.

Private advice from Santa Maria is to the effect that extensive mineral claims and patented oil property has been acquired by the Tepusquet Oil Company between the Tepusquet and La Brea canyons. This company is headed by H. S. Livingstone of the Pinal, with T. J. Mylar, C. N. Symms, R. C. Callander and E. Bellanfante as associates.

The property extends from the mouth of the Tepusquet canyon north into the northern end of the county, and according to the geological report compiled by Ralph Arnold appears to be good oil territory. Several additional holdings are to be taken in by the Tepusquet Company before actual drilling work is begun.

VALLECITOS LANDS SOLD—RALPH ARNOLD'S NAME CONNECTED WITH THE SALE.

A tract of land in the Vallecitos, San Benito county, oil field has been sold through a favorable report made by Ralph Arnold, ex-United States Geological Survey expert, to Charles A. Mau and associates of Los Angeles.

MARICOPA NORTHERN WILL OPERATE EIGHTY ACRES NEXT TO MIDWAY NORTHERN.

The Maricopa Northern Oil Company has been formed to operate a lease of eighty acres obtained from Messrs. Son & Bachman on the E ½ of the N. W. ¼ of section 32, 12-23, on the Maricopa "flat." The Midway Northern has a flowing well on the W. ½ of the same quarter section, and stockholders interested in the one company have formed the other. E. G. Eckstrom is president of the new company, Allen G. Black of Los Angeles is vice-president and S. M. Warmbath is secretary, treasurer and general manager. The lease is for thirty years on a one-sixth royalty basis.

BUYS 547 ACRES IN VENTURA.

E. E. Henderson, general manager of the Palmer Oil Company, has bought 547 acres ten miles west of Santa Paula from C. A. Burrows, the property of the old Wheeler Canyon Oil Company, on which are five wells, all less than 1,000 feet in depth, producing a 30 gravity oil, and which have been pumped continuously for years. Mr. Henderson bought the land for himself and has no intention of organizing a company. Mr. Henderson will sink a deep test well across the hills, or hill, from where the Union Oil Company secured the Wild Bill gusher some twenty years ago. The oil in this region is 30 gravity. The lease runs to 1931.

REEDS SAID TO HAVE ACQUIRED 20,000 ACRES OF PROSPECTIVE OIL LAND.

It is said that Messrs. Reed & Son, the founders of the Reed Crude Oil Company, whose holdings in the Kern river are well known, have purchased no less than 20,000 acres of prospective oil property in the Sacramento valley, north of Sacramento. No confirmation of the story as yet.

ALMOST ENTIRE FIELD OF SUMMERLAND UNDER OPTION.

George Baker of Summerfield, who a few months since bought two of a number of properties in that field and now is the largest operator there, has obtained an option on practically the entire field covering 3,500 feet of water front at a price said to be $65,000, which includes about 100 wells, all shallow, and producing from two to ten barrels daily. With what Mr. Baker already owns, this should give him the entire district.—Oil World.

SEEK PROPERTY OF BABCOCK PETROLEUM COMPANY.

Major H. M. Russell of Los Angeles is reported to have said that he is negotiating with English capitalists for the purchase of the Babcock Petroleum Company's property in the Midway field, comprising the S. E. ¼ of section 23, 32-23, which consists of 160 acres. The property has a number of completed wells. To date there is nothing definite in regard to the actual purchase of the Babcock holdings.

NEW YORKERS OBTAIN OPTION IN EAST SAN EMIDIO.

Walter G. Reese of Bakersfield has given an option on 2,960 acres of oil land in East San Emidio to General F. C. Downey, who took it, as was stated, for New York capital. A part of the land under option lies within a mile of development work now in active progress. The only description given of the property to date is the following: "The land lies in township 10-23 and includes parts of sections 10, 18, 20, 22, 34, 35 and 36 and several others." It is thought to be good for light oil.

PALMER MAKES GREAT PURCHASE.

We have information from Mr. Walker, of the Brown-Walker-Simmons Company of San Francisco, that the Palmer Oil Company has purchased 950 acres of oil land in Cat Canyon, Santa Maria, which is to be developed. Price paid for land, from whom purchased, exact location and further particulars are as yet unascertainable, but will probably become so inside of ten days from the date of issuance of this magazine. The Derrick will give all further information in regard to this purchase in the November issue.

UNION OIL COMPANY HAS GREAT PLANS.

The great Union Oil Company is considering a bond issue of from twenty to twenty-five millions of dollars, for twenty-five years at 5 per cent. President Lyman Stewart has issued a circular letter to the stockholders of the institution outlining a vast development, and giving also most valuable information as to the holdings of the company. With the circular letter were sent checks in payment of the August dividend, to the amount of $145,086. This dividend swells the total amount paid by the company to date to $7,225,716. We quote herewith parts of the letter which President Stewart sent out:

"To only fairly develop our proven oil territory would require the drilling of at least one thousand wells, which will cost on an average $20,000 each, or a total sum of $20,000,000. The purchase of lands in new oil fields, the extension of pipe lines and refinery systems, increases to fleet, additional marketing stations, etc., would involve an investment of many millions additional. These investments would necessarily be distributed through a number of years.

"To attempt to provide for all of these developments from the company's earnings would not only greatly retard them, but would also limit the company's ability to pay to its stockholders as large a percentage of its net earnings in dividends as they have a right to expect under our expressed policy to so pay 50 per cent of net earnings. We have, therefore, been considering the practicability of a large bond issue, say, from $20,000,000 to $25,000,000, for 25 years at 5 per cent. These bonds to be offered for sale only as money may be required. These bonds would absorb the issues of the auxiliary companies which our company has guaranteed. This issue, therefore, would cover the entire bonded indebtedness of our company, and should necessarily be for a large amount, as we could not do further financing along this line while these bonds were outstanding.

"The head of our accounting department reports that the earnings to date are in excess of those for the corresponding period of last year, and will probably exceed those of last year by about $500,000, exclusive of the earnings of the Producers Transportation Company and the Lake View Oil Company, whose great gusher, it is estimated, has produced this year over 5,000,000 barrels of oil, and is still producing at the rate of 500,000 barrels of oil per month.

"With the favorable financial showing which we expect to be able to make, some of our directors are advocating an increase of 20 per cent in our dividends, increasing the monthly payments to 60 cents per share, or 7.2 per cent per annum The demands, however, for additional plant and the closeness of the money market cause us to hesitate in fixing the date for beginning the payments of such increase.

"While it is true that some companies are paying a larger monthly dividend than we, many of them are doing it from a flush production and without much reserve of territory to supply the depletion which must necessarily take place. Our company, on the contrary, has such vast reserves of proven oil lands that it would seem that they could hardly be drilled within a generation, thereby giving reasonable assurance of permanency of income.

"Our geologist, W. W. Orcutt, a man of unquestioned integrity and, in his line, a well-acknowledged, competent authority, estimates that our company has a proven area of oil lands which is nearly three times the area of the Baku field of Russia, and to date only 6 per cent of this proven territory has been fully developed, and practically none of this land has produced to exhaustion. To date this 6 per cent of developed territory has yielded 34,000,000 barrels of oil and from this limited area the Union Oil Company of California is still obtaining its present production of crude oil."

NOTES ABOUT THE STANDARD OIL COMPANY.

The Standard has contracted for the production of both the Globe and Dominion Oil Companies in the Midway field and is laying a six-inch pipe line to their properties. The Standard has also contracted with the June Consolidated for its output; and in the Kern River field it has made a contract with the Bald Eagle Oil Company for its production. Terms not made public.

The Standard is said to have given the producers who are selling their oil on "daily runs" a notification that if they wish to contract for a definite period they must hurry. Truth of report has not yet been ascertained.

The Standard recently brought in another gusher on Section 14-32-23, Midway, close to Taft, at a depth of 3,000 feet. Gusher was estimated at 5,000 barrels when it came in, but it has probably diminished in production since.

Standard is given credit with a large cut in refined oils in the East. Opposition is said to have brought on a cut-rate war between the Standard and the Shell Oil Company of Great Britain. The Royal Dutch and Asiatic Oil Companies are also said to be aligned against the big corporation. If it is true, they are "up against" something stronger than they imagine.

The Standard is said to be sending out letters to producers with whom it has contracts requesting them to notify the company at once whether or not the land from which the oil is being pumped is patented. It is stated that the company has fears that the Federal Government may at some future time demand reimbursement for oil which is being pumped from lands, the equity of the possession of which is doubtful. If such is the case it is generally conceded that the management of the Standard shows a wisdom far in advance of that displayed by a majority of other purchasers in this State.

MOJAVE DESERT PRODUCES OIL AFTER NINE YEARS' WORK.

After about nine years' work and the expenditure of large amounts of money, oil has been struck in the Kramer-Barstow region of the Mojave desert, ninety miles east of Los Angeles, and it is pronounced the lightest in California, being 39.4 gravity, "paraffine base." The unique Kramer Consolidated Oil Company found the producing sand after having fished three sets of tools from the hole and drilled 2,930 feet and is now in the pay streak. This company, like which there is no other in the world, has two paid officers, who receive $10 a week each for their services. It has no promotion stock. This is its third well.

MR. RALPH ARNOLD DEVELOPING NEW TERRITORY.

It has been given out through the press that Mr. Ralph Arnold, famous through his connection and work when with the United States Geological Survey, has accepted the position as consulting geologist and engineer for the Vallecitos Development Company. This company was organized for the development of oil-bearing properties in the Vallecitos district, located in San Benito County. The company is a close corporation. W. P. Hammon of San Francisco, Chas. A. Mau of Los Angeles, and E. W. Stow of Taft are those most interested in it.

Rear Admiral Robley D. Evans, U. S. N. (retired)

Who has accepted the presidency of a great oil corporation and who will exert all his influence to secure an oil burning battleship fleet for the Pacific Coast.

Admiral Robley D. Evans Becomes an Oil Man.

"Fighting Bob" and Prominent Associates Buy Mascot, Premier and Yellowstone Oil Companies---California Consolidated Oil Company formed---Full Details of Most Significant Oil Property Sale Made in 1910.

Rear Admiral Ribley D. Evans, U. S. N., retired, known around the English-speaking world as "Fighting Bob," has gone into the oil business. He is president of the California Consolidated Oil Company, a corporation formed by the consolidation of the famous Mascot, Premier and Yellowstone Oil Companies, the properties of which are recognized as being among the best and most desirable in California.

The purchase is the most significant made in oil lands in California during the present year. It points directly to the use of oil as the exclusive fuel for the United States Navy. Admiral Evans has made a statement showing his absolute conviction that oil is destined to entirely displace coal within the immediate next few years. The Admiral says that he will sell "to any one or any country." He says that the present holdings of the company are only a beginning. The three companies together are already greater and more valuable than was the Union Oil Company only a few years ago. It looks as though a huge concern was in its infancy. International attention has been called to the company which the Admiral has accepted the presidency of and in which he has invested. Finances for the company have proven the least of its troubles. When the sale of the three properties and the formation of the new company was announced, we are told, inquiries for reservations at whatever price the stock should sell at came in from oil over America and Europe. The Admiral's company is capitalized at $10,000,000.

The controlling interest in the three companies was secured by Admiral Evans by a cash payment of $600,000, which, it is announced, will be duplicated upon the new company's taking possession of its properties. A description of these properties follows:

Mascot Oil Company—Property consists of 160 acres on the N. E. ¼ of section 26, 32-23, Midway, located on "25 Hill," and leased from the Mt. Diablo Oil Company on a one-eighth royalty basis. The present official daily oil production is 3,000 barrels, delivered from thirty-four wells. The company has four wells now drilling, and expects to drill in all about twenty-two more, making a total of sixty. The oil is contracted to the Standard Oil Company at 50 cents per barrel, and is now providing a net income of $360,000 yearly. The company now pays dividends at the rate of 24 per cent on par per year.

Premier Oil Company—Holdings consist of 160 acres in the best-producing region of the Coalinga field, having at the present time fourteen producing wells which deliver about 60,000 barrels of oil per month. The property is located upon section 24, 20-14, and is surrounded by the American Petroleum, K. T. & O. and other excellent properties.

Yellowstone Oil Company—Holdings consist of 225 acres of land in three properties in as many different fields. They may be briefly described under:

Twenty acres of land in section 20, 28-28, Kern River field, formerly owned and operated by the Akron Crude Oil Company, ten acres being operated by the Yellowstone, producing about 10,000 barrels of oil per month and earning $48,000 per year, the remaining ten acres being under lease to the Madison Oil Company upon a 30 per cent royalty basis;

Forty-five acres of land in McKittrick, twenty acres of which is under lease to the Madison Oil Company, the remainder being developed by the McKittrick Investors Oil Company;

One hundred and sixty acres on the "Maricopa flat," located on section 7, 11-23. This property is leased to the following companies: Lady Washington, Ogontz, California King and Canadian Queen Oil Companies. These holdings are in a direct line with large strikes of recent date.

So much for the various properties.. Names of the officers of the company and their residences and businesses, as published in the official announcement of their entrance upon a business career in oil, are as follows:

Officers.

President—Rear-Admiral Robley D. Evans, U. S. N., retired, Washington, D. C.

Vice-President—Robert S. McCreery, New York City.

Treasurer—Theodore P. Gilman, New York City.

Secretary—Robert Lee Dunn, New York City.

Assistant Secretary—James A. Cruikshank, San Francisco.

Directors.

Rear-Admiral Robley D. Evans, U. S. N., retired.

Robert S. McCreery, Treasurer McCreery Realty Corporation and of McCreery Dry Goods Co., New York City.

Theodore P. Gilman, ex-Controller State of New York and President General Electric Inspection Co., N. Y., New York City. Also President Flower Waste and Packing Co., New York City.

Hon. John W. Mitchell, Attorney for Lankershim Estate, Los Angeles, Cal.

Hon. Meredith P. Snyder, President California Savings Bank; Member Los Angeles Clearing House Committee; three times Mayor of Los Angeles, Los Angeles, Cal.

Frank N. Fish, Cashier Metropolis Trust & Savings Bank, San Francisco, Cal.

Robert Lee Dunn, Managing Director Lincoln Memorial Endowment Association, New York City.

Admiral Evans says he decided to go into the oil-producing business only after much study and serious consideration of the fuel problem as it affects the navies of the world. Admiral Evans is, of course, and always has been, an advocate of a mighty navy for the United States. He foresaw the time long since when we should need double the number of ships which now patrol the Pacific Coast and journey to the Philippines and other insular possessions. The comple-

SCENES IN THE GREATEST OIL P

MIDWAY, WESTERN K

This photograph shows the property of the famous Mascot Oil Company on "Twenty-five" Hill, the city of Taft being in the background. The property is o

Looking across the Maricopa "Flat" towards the Great Gusher District---The La Blanc Oil Company's Well in the foreground, has just "come in" a
properties are but a little removed, most of the derricks being on the right of the center of page. This view was

Admiral Evans and party viewing a gusher on the property of the American Oilfields Company---This is the well which caught fire later, but

DUCING REGION IN THE WORLD

COUNTY, CALIFORNIA

t in all Midway and the report that it had been sold to Admiral R. D. Evans, came as a great surprise. As high as $2,500,000 has been offered for this land.

r. This stretch of land is the original gusher district, the Monte Cristo, K. T. & C.. M. & M., Ethel D., Maricopa National, Pacific Midway, Essex and Wellman he Yellowstone Oil Company's property which Admiral Evans and associates took into their big combine.

up" and saved a huge loss through flames. All of Admiral Evans' party were greatly surprised at the remarkable development of midway.

tion of the Panama canal is one of those events which, in the eyes of the Admiral, demand upon the part of our Government a double number of battle-ships; it has been his life-long belief that capability for self-protection is, in itself, the greatest and most powerful argument which can be put forth to the "other fellow" to keep the peace.

Rapidity is evrything in the present age. Fuel is a prime consideration in the matter of securing rapidity. Fuel oil experiments for the past eight or nine years have tended steadily toward the adoption of liquid fuel for battle-ship use. Admiral Evans has been one of the closest followers of battle-ship developments, and he has declared that it was over two years ago that he became convinced that oil was exclusively the coming battle-ship fuel, the coming commercial fuel, the general fuel of the whole Pacific Coast as well as for the Atlantic liners and United States ships. "California," said Admiral Evans, "holds the world's future oil supply. The oil produced is the very best fuel oil in the world. It has no real competition."

The Admiral's own words make his reason for going into the oil business much plainer and say far more for his judgment and foresight than anything which we might see fit to write. The intrepid veteran of two wars and fifty years' service in one of the most honorable and exacting callings in the world, the service of his country in the United States Navy, tells in a few modest words why he entered the oil business. When the deal was finally consummated and made known to the public, he said:

"I have long regarded the oil industry as one of the most important and promising of the newer lines of trade. Without intending to enter the business of producing or selling oil, I have been carefully investigating, for several years, every available source of information on the subject, first, because of my interest in the use of oil as a fuel for naval vessels, and later because of my conviction that the future of the commodity would make it one of the most important subjects in the trade of the world.

"Many interesting business opportunities have come to me since my retirement from active service in the navy, two years ago. Fifty years of service in a calling which is more than ordinarily exacting, renders any man of active temperament unfitted to idleness. It has been my intnetion, when the right opportunity occurred, to connect myself with some enterprise of sufficient size, and offering sufficient promise for the future to appeal to my best energies. That opportunity is present in the organization of the California Consolidated Oil Company.

"After personally visiting and carefully investigating the proposed properties of the company, their books, contracts and options, I have accepted teh presidency of the company and have invested my own money in its shares. I will personally direct its affairs. This is the only oil company with which I am connected."

Admiral Evans' Trip Through the Oil Fields.

When Admiral Evans and the gentlemen associated with him in the recent purchase came West, they were met at Bakersfield by the owners of the controlling interests of the companies. From Bakersveld the entire party made a thorough tour of the oil fields of the San Joaquin Valley, in automobiles. We give photographs herewith of the scenes passed through and of the distinguished guests of Mr. N. F. Wilson, president of the San Francisco financial house through which the purchases were made possible under the conditions mentioned. Mr. Wilson was largely instrumental in bringing about the formation of the California Consolidated Oil Company. He is one of the younger generation of business men; his constructive business ability has been shown in a brilliant manner not only in the consolidation of the three great properties which went to make up Admiral Evans' company, but in many other enterprises of magnitude connected with the California oil industry.

Following are those who made up the party which journeyed through the oil fields, all of whom were financially interested in the formation of the new corporation: Admiral Robley D. Evans, U. S. N., retired; Robert S. McCreary, of New York City, treasurer of the McCreary Realty Corporation of that city; Robt. Lee Dunn, new York City, managing director of the Lincoln Memorial Endowment Association; Theodore P. Gilman, New York City, ex-Controller, State of New York, president of General Electric Inspection Company and of the Flower Waste and Packing Co., both concerns of New York City; J. A. Cruikshank, of New York City; D. S. MacInnes, of London, formerly of New York and San Francisco; R. P. Boyer, vice-president of the Lincoln Mortgage and Loan Company, of San Francisco; Col. Timothy Spellacy, owner of the controlling interests in the Premier and Mascot oil companies and president of both until the sale; H. B. Guthrey, the well known Los Angeles oil man, owner of the Oil Industry of that city; Jno. W. Mitchell, of Los Angeles, vice-president of the Bank of Southern California, of that city; J. D. S. Thompson, of Los Angeles, vice-president of the Mascot and Premier oil companies until the sale; ex-Mayor M. P. Snyder, of Los Angeles, and president of the Los Angeles Savings Bank. The itinerary of the party was directed by Mr. N. F. Wilson, before mentioned.

From start to finish the trip was a splendid success and a verification of all representations made in regard to the values placed upon the lands which were under consideration for sale. Admiral Evans, in a signed statement, later said: "The reports and estimates are very conservative." They were.

Admiral Evans will make his home in California. He has been made head of the Naval Committee which will arrange a great naval pageant for the world's fair which it is expected will be held in San Francisco in 1915, the great Panama-Pacific International Exposition. The Admiral says that oil is the only fuel for the vessels of the United States navy; he would like to see those vessels assemble in the harbor at San Francisco burning oil, and believes that inside of ten years the governments of the world will be using oil solely for the propulsion of their fighting craft. If there is anyone in the world who can tell what is best for our navy, surely "Fighting Bob" is well qualified.

R. P. BOYER,

Vice President of the Lincoln Mortgage and Loan Company, of San Francisco, who has gone to Washington, D. C., to escort a party of capitalists on a special tour of the oil fields.

H. B. Guthrey, Hon. Theodore P. Gilman and Admiral Robley D. Evans "Talking Oil."

MR. N. F. WILSON,

President of the Lincoln Mortgage and Loan Co., of San Francisco, A man of great resources and business ability, who interested Admiral Evans in the oil business.

Rear Admiral R. D. Evans and Party on Property of Yellowstone Oil Company.

Reading from left to right: 1, R. P. Boyer, Vice President Lincoln Mortgage and Loan Company; 2, Theodore P. Gilman, former Comptroller of the State of New York; 3, N. F. Wilson, President Lincoln Mortgage and Loan Company; 4, Meredith P. Snyder, President California Savings Bank of Los Angeles; 5, James A. Cruikshank of New York; 6, Rear Admiral Robley D. Evans, U. S. N., retired; 7, Robert Lee Dunn, of New York, Managing director of the Lincoln University Endowment Association; 8, John W. Mitchell, Attorney for Lankershim Estate of Los Angeles; 9, D. S. MacInnes, of London; 10, Hubert T. Morrow, Attorney, of Los Angeles; 11, Col. J. D. S. Thompson, Vice President of the Mascott and Premier Oil Companies; 12, H. B. Guthrey, of Los Angeles.

SUNSET-MIDWAY-McKITTRICK

LA BLANC OIL COMPANY.

The La Blanc has brought in its first well, which is said to be a big one, at a depth of 2,264 feet. The well was drilled 125 feet into the sand, and is considered to have proved absolutely that the Maricopa Flat overlies one continuous, profitable oil-bearing sand. The belief in the "flat" is well substantiated by the wells of the Essex (sold to the Captain John Barneson), the Pacific Midway and the Western Minerals, scattered widely apart to the east and southeast. There has never been any reason to disbelieve that oil would be found in big quantities since the Pacific Midway got the fluid —or before that time—but until the oil is actually produced by the drill operators are sometimes very wary.

The La Blanc's well is said to have cost in the neighborhood of $50,000. It has been almost a year in the drilling It is located on Section 4-11-23 at Sunset, close to the properties of the Buick, Maricopa National, Essex, American Sunset, Canadian Sunset, Lady Washington and the recently sold Yellowstone Oil Company.

MANCHURIA MIDWAY GETS FINE SHOWING.

The Manchuria Midway Oil Company, operating on Section 26, 31-22, in the North Midway field, has encountered a great body of oil sand, said to be the largest that has ever been discovered in the field. The sand was struck at a depth of 1,400 feet and the bit, which has already pierced beyond the 1,500-foot mark, has not yet gone through it. The well is making considerable gas and it is expected that it will be a big producer, a gusher being generally predicted. Officers and men of the United States Navy are the organizers and owners of the company. Mr. Luke T. Kibler, who has written our North Midway news on several occasions, is also interested.

REGAL OIL COMPANY.

The Regal Oil Company, operating on Section 14-31-23, Midway, has declared a dividend of 44 cents per share, the total amounting to $44,000. The company's land is leased by the Union Oil Company. The Union's "Regal Gusher" is located upon this property. It is under control and has been delivering heavily ever since it came in on May 21st, last. The company is owned by exactly fifteen stockholders.

S. P. RETAINS RAILWAY.

Numerous reports have been created recently that on October 1st the Southern Pacific would relinquish the operation of the Sunset Western Railway, giving it over into the hands of the Santa Fe, says the "Midway Driller." These reports are branded as errors by the Midway paper, which states that the change will not take place until October 1, 1911.

MARICOPA NATIONAL OIL COMPANY.

Maricopa National Oil is reported to be easily making 1,000 barrels per day and it is understood that this amount of oil has been delivered daily to the agency for some time now. This well is under perfect control and is easily the best of any brought in in this part of the field where such wells as the Ethel D, Wellman and K. T. O. gushers have for some time past been the envy of oil men.

LADY WASHINGTON LANDS CASING.

The Lady Washington Oil Company has landed the 8-inch casing in well No. 1 at a depth of 2,160 feet. Formation, brown shale, with all indications that the water has been finally shut off. While waiting to see whether or not the job of shutting off water has been successful, preparations are being made, we are told, to continue work in well No. 2. Well No. 1, having gone through the heavy water stratum encountered in almost all of the recent big wells, is expected to come in in the same class as the Essex, or any of the other big wells in the neighborhood, although officials of the company say that they will be satisfied with a two or three hundred barrel steady producer.

WESTERN MINERALS STRIKES LIGHT OIL.

The Western Minerals, about a mile southeast of the Yellowstone, on the flat at Sunset, reports a strike of high gravity oil in its well on Section 25-11-23. The company tapped an oil sand at 1,650 feet containing oil of 31 gravity, said to be the lightest oil ever found in the Midway district. The company passed through two sands containing a greenish oil before reaching the last strike.

MATSON COMPANIES MOVE OFFICES.

The offices of the Honolulu and Hawaiian Oil Companies (branches of the Matson Navigation Company) are to be moved from Maricopa to Taft. L. A. Crandall, general manager, is authority for the information.

OAKLAND-McKITTRICK WILL OPERATE.

The Oakland-McKittrick Oil Company, a new corporation composed of Oakland capitalists, headed by R. H. Berry, has taken over 80 acres adjoining the Nacirema Oil Company on the north McKittrick and has let the contract for drilling its first well. It is expected that oil in good quantity will be developed at a fairly shallow depth.

MIDWAY PREMIER OIL COMPANY.

The Midway Premier, on Section 5-32-23, Midway, has passed through the "tar" sand at about 1,400 feet depth. Going down.

MUSCATINE OIL COMPANY.

The Muscatine has brought in a small well, good for about 250 barrel of oil per day, according to the "Oil World." The well is free from sand or sediment.

BIG SUPPLY OF NEW WELLS.

Some one hundred and fifty-four wells are said to be due for completion in the various West Side fields some time during the present month.

STANDARD TO USE GAS.

The Standard Oil Company is to make use of its wonderful West Side gas wells in supplying Bakersfield, Fresno, Los Angeles and even San Francisco, with fuel and light, according to various newspaper reports. We have been unable to verify any of these reports, but there may be truth in them as millions upon millions of feet of gas per day are now being wasted utterly. It would seem to be only economy for the Standard to utilize the gas in some such manner.

SANTA FE GETS NEW GUSHER.

The Santa Fe has a gusher on the northeast quarter of the southeast quarter of Section 15-32-23, according to our correspondent, which flowed at the rate of 10,000 barrels daily until it sanded up. The well was brought in at about 2,200 feet depth. The title to the land is contested.

VISALIA MIDWAY OIL COMPANY.

The Visalia Midway Oil Company is said to have got a very large well on the 8th inst. The report has not yet been confirmed.

TEMPLOR RANCH OIL COMPANY.

The Templor Ranch Oil Company has been unable to move any of its oil to date because the pipe line has until the present been completely filled by Lakeview oil. Templor has run out of storage and is anxious to move some of its product as soon as possible. It is said that the Producers Transportation Company has notified the Templor management that they will shortly be able to take their product.

PYRAMID OIL COMPANY.

The Pyramid Oil Company, on Section 18-32-25, North Midway, has encountered a gas showing at a depth of some 600 feet. On Section 26-31-22 the Pyramid's well has encountered a showing of oil at a depth of 1,585 feet. This is taken to mean that the big sands have been entered, but no gusher news has come as yet.

AMERICAN OIL FIELDS COMPANY.

The American Oilfields Company is now producing about 14,500 barrels per day on Section 36-31-22. They have two sanded wells and five closed wells on this section. They will shortly complete two cement reservoirs of 500,000 capacity each, which will provide the necessary storage for their huge production.

CENTRAL INCREASES CAPITAL STOCK.

The Central Oil Company, operating in the Whittier field, has increased its capital stock from $1,000,000 to $3,000,000. The company has 2,200 acres of land, about 200 acres of it proven, and a production of 25,000 barrels a month.

JEWELL FINISHES NO. 11.

The Jewell Oil Company has finished well No. 11, according to reliable information received from our correspondent. The well was finished at 1,204 feet and will be perforated immediately. From the showing of oil made during drilling it is believed that the well will prove as good a producer as any of the wells on the property. Jewell is now in charge of a new superintendent and is being put in better condition every day.

CAL. SEABOARD & M. M. CRUDE COMPANIES.

The California Seaboard, 25-32-23, Midway, is about to land the casing and place the well on the pump in the near future.

The Midway Maricopa Crude Oil Company is down 900 feet with the rotary.

HALE McLEOD OIL COMPANY.

The Hale McLeod Oil Company, located on Sections 5, and 8, 32-23, Midway, delivered in the neighborhood of 10,000 barrels of oil last month.

I. X. L. MIDWAY OIL COMPANY.

The I. X. L. Midway Oil Company has acquired a 40-acre lease of patented land on Section 36, 30-22, in the South McKittrick field and will develop same.

UNITED INCREASES DIVIDEND.

At a meeting of the board of directors of the United Oil Company, held at the company's office in Los Angeles, the fifth monthly dividend of 1 per cent on the par value of $1 of the stock was declared payable October 10 to stockholders of record October 1. The United Oil Company was organized last November. It owns 500 acres in the Carisa hills. Its five completed wells are producing 30,000 to 40,000 barrels of oil a month, which is sold to the Standard Oil Company under contract at 65 cents per barrel.

LAKEVIEW OIL COMPANY.

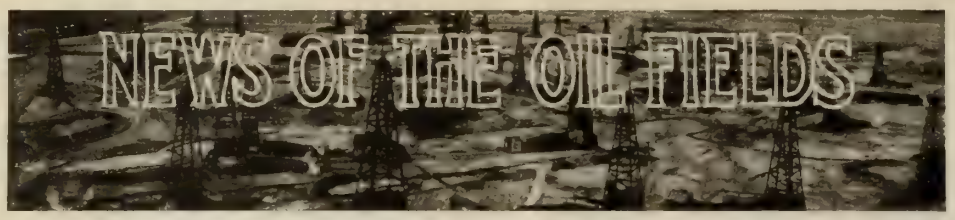
Stockholders in the Lakeview Oil Company have increased the capitalization from $100,000 to $2,500,000 to facilitate trading in their shares after same have been listed on the exchanges. Present value of shares is $25. Under the new capitalization the valuation is proportionately decreased to $1 per share. The Lakeview gusher is still flowing at the rate of 16,000 barrels of oil, day in and day out. The oil is all being cared for, according to reliable despatches.

MIDWAY FIVE OIL COMPANY.

The Midway Five is down 2,100 feet on its 30 acres on the south half of 5-32-23, a little to the west of the St. Lawrence, adjoining the Hale-McLeod on the north and the Midway Premier on the east. It is expected that the hole will be perforated within a few days.

UNITED WILL PIPE GAS.

The "Midway Driller" states that the United Oil Company will lay a gas pipe line from its gas wells on Sections 24-31-22 and 6-32-23 for drilling fuel. Other operations will be supplied, too, as the pressure is over 400 pounds to the square inch.



Reported by
Special Field Representative
of the
California Derrick

COALINGA---By Guy H. Salisbury

There has been considerable discussion over the doings of a company claiming holdings near the Devils Den Consolidated Oil Corporation, section 22, 25-18. The Devils Den Consolidated drilled their No. 1 well to 1,480 feet. At 1,406 feet the tools entered a sandy shale, a gas pocket was cut which threw the oil up into the derrick. A careful estimate by one who had worked on the hole places the flow at not more than 300 barrels per day. The oil tested out at 36 deg. B. This oil was run back in the well between the casing, so our informant states, to prevent a showing being made. Men who have worked on the well believe the well is too shallow; should be at least 2,000 feet deep. The well has not produced very much oil since the first blowout here mentioned. Yet the company referred to has advertised this as a gusher near their property, with the hope of selling stock on that representation.

The Coalinga Hub Oil Company, section 22, 21-15, are in an unknown formation; jet black substance that burns freely and leaves a redish ash, the oder from the stuff after it has burned is much like that from an ordinary candle. When rubbed between the fingers it leaves the black the same as lamp black and grease. Samples have been sent to William Forstner, genealogist, and to the State Mining Bureau and also to the State University, that the strange substance may be classified. The stuff chews like paraffine. Though paraffine will not soil your hands, this stuff leaves a dirt that is hard to remove. The tools so far have passed through 40 feet of this formation, and are now 3,970 feet deep. The oil men of this field are stumped, the oldest admitting he can not classify the substance.

The Coalinga Security Company, section 8, 20-15, have had the well on the beam for several days, making at first about 300 barrels. The well has gradually increased until now she is making fully 600 barrels of oil, about 18 deg. B. This well was the first well to be drilled and finished up with a rotary rig on the West Side field.

The wells on the East Side field are running full-handed, the production being contracted, and the transportation facilities of the oil marketing companies being ample to care for the production there has been no shut down.

The Empire Oil Company, section 32, 19-15: Well No. 2 is 1,900 feet deep with 10-inch casing, having drilled past the tools that were lost in the hole. Well No. 3 is 2,480 feet deep with 8¼-inch casing.

The Dominion Oil Company, section 7, 23-17: Well No. 1 is 1,740 feet deep with 8¼-inch casing; formation, from brown shale with seams of oil, into blue shale, then into a hard gray water sand that overlies the pay sand.

LAKE SHORE MAKES IMPORTANT DISCOVERY.

The Lake Shore Oil Company, operating on section 30, 26-21, on the northwest quarter, with a portable rig, have made a very important discovery. At 500 feet depth, with stovepipe casing, they entered the prolific oil sand with oil of 20 gravity or better. The well is reported to be making 100 barrels per day. The property is fenced and the strike is kept as quiet as possible. Our informant, a reliable citizen of Coalinga, was inside the "fence" and saw what he reports. Marten & Dudley are operating the property. This company is located on the south end of the Lost Hills, on the southeast slope, and entered the pay sand at a much less depth than was expected. Considerable gas was encountered, throwing the oil up thirty feet or more into the air on three occasions. This strike has been followed up by considerable excitement in jumping, and attempted jumping, of claims. Some one gave the agents of the Associated Oil Company a tip on this prospect—at least the company has been able to get in on this in fine shape, having secured a large acreage, being mostly southeast of the Lake Shore. This report comes from the field. About two years ago a number of parties filed "desert land claims," sinking shallow wells for water, and "homestead claims" upon much of this land, so that today very little is open to location, all having been filed upon by one pretex or another. . Josiah Owens, late geologist for the Southern Pacific, made a statement to your correspondent some two years ago that the Lost Hills would be an oil district some day. The owners of the Lake Shore have used every means, even barbed-wire fencing, to keep the strike from the public. It is not generally known how thick the producing sand is at the present depth. Several parties are going into the Lost Hills with portable rigs. A considerable development work is being laid out and portable rigs are in great demand.

The El Cerrito Oil Company has secured a lease (some time ago) of twenty acres in the Maricopa field and are operating the same. The well is 450 feet deep with 12½-inch casing, is located about one-half mile from the Western Mineral well, that came in a few days ago with 21 gravity oil. This will be pleasant news to the stockholders in this field who were not aware of any move of this kind, and were worried about the "stripping" of the old well on section 14, 23-17, and the shipping out of the stuff to the Sunset field and elsewhere, as no word was vouchsafed the stockholders as to what the management was doing with the personal property of the company.

The Kaweah Oil Development Company, section 30, 21-16, held a stockholders' meeting at which it was decided to resume operations at once. The well is being drilled in with a rotary rig. The property was shut down on account of the withdrawal order of President Taft. The recent expressions and assurances said to have been made by the Administration that those who were seeking to develop land in good faith would not be disturbed has stimulated confidence in the management of the Kaweah, who will now seek to complete the well started.

The British Consolidated Oil Corporation, Limited, on section 26, 19-15, has cemented off the water in well No. 1 at 2,725 feet with 4½-inch casing. This well was re-drilled. The 8¼-inch casing in well No. 2 was pulled out; are now re-drilling; will cement off the water with the 8¼-inch. On section 12, 19-15, well No. 2 is 2,200 feet deep with 2,150 feet of

10-inch casing in the hole. The 8¼-inch was all pulled and the 10-inch was also pulled; are now putting in a string of 10-inch casing which will be carried to 2,600 feet.

The Valley Oil Company, section 32, 20-15, finished well No. 1 at 3,440 feet in 4¼-inch casing. The well has been on the pump for several days, at times the production being at a 300-barrel rate. The tubing was pulled last week and a new seven-foot pump placed in the well. This pump is being tried out. As soon as the sand starts to run the production will increase.

The Berkeley-Coalinga Oil Company, section 2, 21-14, at 175 feet entered the second water sand, and at 200 feet they are in the third water sand. The oil continues to increase slightly in the seepages to the west. Severtl sands have been cut so far. The company are after the zone "C" oil, and are looking for a road oil.

The Coalinga-Monterey Oil Company, section 4, 20-15, landed the 10-inch casing at 1,900 feet, have set in the 8¼-inch casing and are now 2,520 feet deep with the rotary. The hole is in fine condition, the casing moving in without any trouble or excess friction.

The Boychester Oil Company, section 18, 21-15: Well No. 1 is 2,600 feet deep with the 8¼-inch; is re-drilling the bottom of the hole; is now past the three joints of 8¼ left in the hole, and going nicely; will cement off the water at about 2,900 feet.

The Pittsburg Oil Company, section 24, 19-15, has been purchased by M. J. Laymance et al. of Oakland. The property has stood idle for over 18 months. The present owners hope to complete the well. Operations will be resumed at an early date.

The Devils Den Consolidated Oil Company are reported as having a portable rig on the northeast quarter of section 30, 26-21, one-half mile from the Lake Shore well. So far they have not entered the oil sand.

The Welcome Oil Company, section 33, 25-18, have a carload of material on the siding at Lemoore, boiler and engine and supplies bought up from some abandoned lease, which will be hauled out this week.

The British California Oil Company, Limited, on section 16, 20-15, have changed over to standard tools from the rotary, have set in 2,400 feet of 8¼-inch casing, and the hole will be finished with standard tools.

The Fresno-San Francisco Oil Company, section 1, 20-14: Well No. 9 is 540 feet deep with 10-inch casing. This is 900-foot territory to pay sand.

The Woy, Meachen & Madsen (W. M. & M.), section 31, 19-15: Finished up well No. 2, now on the beam, producing. Derrick completed for well No. 4; will rig up this week.

The California Oilfields, Limited, on the northeast quarter of section 26, 19-15 (the old Northeastern), have cemented off the water at about 2,600 feet.

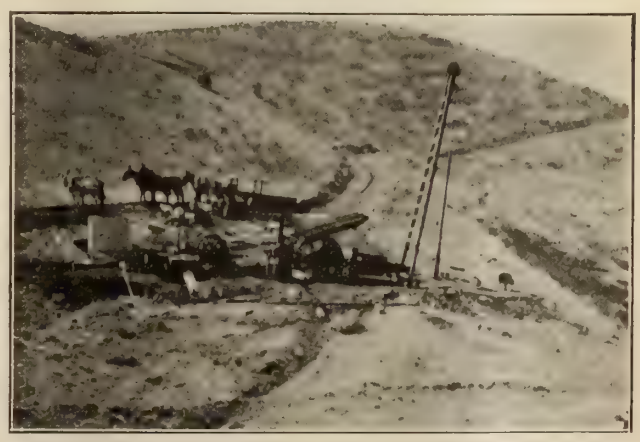
The Coalinga Mohawk Oil Company, section 12, 20-15: Well No. 2 is 2,800 feet deep with 8¼-inch; wells No. 3 and No. 4 are drilling; well No. 1 is making 1,200 barrels per day; sold to the Standard.

RAPID OIL BURNING SHIPS ON WAY WEST.

A press dispatch says that the fast turbiners Yale and Harvard, which have been running north out of New York, have left New York for San Francisco in charge of pilots of the latter port. It is expected that they will arrive in about forty days from time of starting, or the middle or latter part of November. When these speedy oil burners reach the Pacific Coast they will run between San Pedro and San Francisco on a fast schedule.

PIONEERING WITH A "PORTABLE RIG."

The portable oil well drilling rig has had a very important part in the development work along "discovery" lines in the oil fields on the west side of the San Joaquin valley. Being light in weight and strong, these rigs are moved and set up with little expense, run with a gasoline engine, making fuel hauling less expensive, and being capable of going down from 1,000 to 1,500 feet, handling a short string of 10-inch casing easily, they have been used quite extensively in prospect work. Through the west side of Kern county some ten years ago quite a number could be seen churning a hole down to make a discovery. Within the past two years about twelve portable rigs have operated about the Devils Den district and the Ketteman Hills—today at least seven are being used in the Devils Den district. The Daugherity Brothers of Lemoore are using a heavy portable in Tp. 25 S., R. 19 E., with marked success. In the Lost Hills district, Kern county, the Lake Shore has just brought in a 100-barrel well at 500 feet with a portable. In many cases after a discovery has been made a standard rig has taken the place of the portable when the hole was over 1,000 feet. In a number of cases in the south field the portable was used for a "discovery," and filings were then made. In this field (Coalinga) the Berkeley-Coalinga are operating a portable rig on the northeast quarter of section 2, 21-14, have a hole about 200 feet deep, and are in a heavy oil suitable for road oil, such as the management



The "Portable Rig"

Illustrating Mr. Salisbury's story of the important role the "portable" has played in the development of California's oil supply

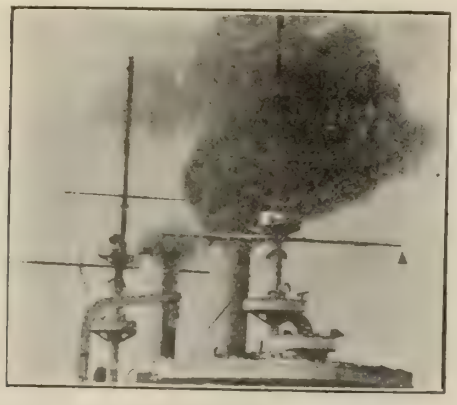
is seeking. The Coalinga Roadway Oil Company, on same section, Judge W. H. Kerr manager, will use a portable rig to make a discovery on their property. The portable was used along the oil croppings in this field to quite an extent in the early days of the field, the discovery made indicating the pitch of the oil sands under the plain that today are occupied by a large number of companies operating valuable lands. The work of the pioneer, or wild-catter, has been assisted largely by the portable in the past. With the new conditions that confront us in the conservation wave of today it is difficult to predict to what extent the use of the portable will be continued, as the trend is against the prospector and in favor of capital, as a lease condition is intended to crowd out the small man, the pioneer, in favor of the "interests." Read the conditions suggested by those who are advocating the conservation of oil lands; examine the bond required of the operator, and see at what station the small man will get off—surely not at the station written "Prosperity." The man with capital will be able to qualify on the bond—another victory for the "Interests."

THE OIL-BURNING BATTLE-SHIP QUESTION.

The progressive spirit of the British Admiralty has been noted more than once in these pages. The work now being undertaken in furnishing the British Empire with battle-ships of a more practical nature than those at present in vogue will, it is predicted by enthusiasts of the movement, revolutionize the form of the modern Dreadnought. We refer to the "internal combustion" Dreadnought, which is stirring up such a furore in naval circles around the world.

The new Dreadnought is to appear, from all that we can gather, much as the cut upon the cover of this issue shows. There will be neither funnels, boilers, stokeholds nor any other of the salient features of the steam-propelled warships of the present day. Fore and aft gun fire will be made practical. The economy of space is very great indeed. The speed, it is said, will be greatly increased. Chances of being detected by the columns of smoke which arise from coal burners would be absolutely done away with. But this latter condition can be obviated by the mere use of oil burners. Crude oil makes no smoke when the combustion is perfect. It is for this reason that Admiral R. D. Evans advocates the

Do you see this smoke?



Admiral Evans will use his influence to do away with it

use of oil in our naval vessels so strongly. The economy in space would be almost as great with oil burners as with internal combustion, or "gas" engines; the speed, as proved by tests, could be increased; a vast saving could be effected in the actual cost of the fuel itself, and a very material aid would be given the oil industry, although this latter is merely incidental. However, the cleanliness which oil possesses over coal, the ease with which oil may be loaded and the huge supply which the Government can obtain are factors for the consideration of the authorities with whom the matter lies.

The fact that an effort is being made to have the Government grant the Pacific Coast a battle-ship fleet is worthy of mention; the fact that Admiral Evans has interested himself in the matter, that he is in the oil-producing business now, that his judgment is highly valued in naval circles, and that he will undoubtedly exert his influence toward the use of oil, are also worthy of note. The fact that such an eminent authority as the retired Admiral is strongly advocating the use of oil on this Coast at least seems to point to a market for oil and a new era for the navy.

JOHNATHAN BEGG, Expert Locator of Oil, can tell the outside boundary and depth of any oil field. Address, care the "California Derrick"

CHEMICAL COMPOSITION OF CALIFORNIA PETROLEUM

—By H. W. Burkhart—

Being part of a paper read before the eighteenth annual convention of the Pacific Coast Gas Association, held in Los Angeles September 20, 21 and 22, 1910.
Used by us at this early date through courtesy of Editor of Journal of Electricity, Power and Gas.

As regards it ultimate composition, crude petroleum consists essentially of carbon and hydrogen, together with oxygen, and usually widely varying amounts of nitrogen and sulphur.

California crude oils contain from 0.5 to 1.2 per cent nitrogen.

The occurrence of sulphur in crude oil is due to the fact that free sulphur is always present in the earth's crust, though in highly variable amounts. Sulphur is freely soluble in oil, and occurs in crude petroleum not only in a mere solution, but also very firmly combined to carbon and hydrogen as thio-ethers and mercaptans, commonly called organic sulphur.

California crude oil greatly varies in character, some oils being of a greenish or blueish fluorescence, while others are viscid and almost black.

The specific gravity ranges from 0.993 to 0.850, or from 11 degrees Beaume to 34 degrees Beaume.

The oils of California contain some times as much as 45 per cent asphaltum, and for that reason the gasoline test for determination of foreign matter in the oil is not always practicable on account of the asphaltene forming a sludge in the gasoline. The centrifugal test is more correct, but the only way to determine accurately the percentage of water and foreign matter in crude petroleum is the distillation test.

The amount of sulphur in California crude oil varies between 0.5 per cent and 2.5 per cent. The only thoroughly satisfactory process for determination of sulphur is that of combustion in oxygen in the Mahler bomb and determination in the usual way, as barium sulphate.

STORAGE CERTIFICATE PRICE GUARANTEED.

While under the newly made agreement the Associated guarantees no minimum price for oil the Union and Agency continue to guarantee 35 cents on the certificates to be issued on storage oil. There will be no changes whatever in the certificates which are being signed and the issue of which is being delayed only by clerical labor. Should the Associated average price in any month fall below 35 cents the Agency will make up the difference out of the receipts for the following month to the holders of the certificates. It is not anticipated, however, that this will be the case.

RECENT INCORPORATIONS.

(Reported expressly for the "California Derrick.")

Abolithe Manufacturing Company, Oakland; $500,000; directors, H. H. Sprague, C. J. Best, E. Ceriat, A. Raventos and Walter Christie; to operate and deal in oil, petroleum and mineral lands.

Anchor Petroleum Company, Los Angeles; incorporated August 20; capital $500,000; directors, W. P. Thompson, W. P. Cunningham, S. Hastain, F. M. Berry and N. D. Darington, all of Los Angeles.

Indian Wells Oil Company, San Francisco; $200,000; directors, R. A. Dean, B. Bamberger and A. D. Van Bakkelen, W. A. Van Bakkelen and W. H. Willis.

King-Alban Oil Company, San Francisco; $250,000; directors, E. J. Miley and W. E. Solby of Berkeley, and D. J. Graham of Fruitvale.

Los Robles Oil Company, $25,000; directors, Charles E. Ehle, F. F. O'Brien, C. F. Hansen, W. W. King and Hugh Reid.

Paraffine Oil Company, Phoenix, Ariz.; $1,000,000; directors, A. C. Fredericks, P. S. Brunk, J. F. Painter, H. E. Penland and H. W. Brunk.

Range Sixteen Oil Company, Phoenix, Ariz.; $500,000; directors, J. C. McCormack, D. P. Murphy, and John M. Fairfield.

San Emidio Oil Company, Los Angeles; $500,000; directors, E. P. Gable, Frank McSmith, N. L. McNair, B. F. Overhalt, C. I. Shannon and W. E. Lady.

Theresa Land and Oil Company, San Francisco; $10,000; directors, Arnold Polk, James Newlands, Jr., S. D. Landecker, H. G. W. Dinkelspiel and O. C. Capplemann.

SANTA MARIA

PALMER HOLDS ANNUAL MEETING.

The annual meeting of the stockholders of the Palmer Oil Company, the holdings of which are located in the Cat Canyon district of the Santa Maria field, was held in San Francisco recently and the following officers were elected: President, Frank L. Brown; first vice-president, L. A. Hilborn; second vice-president, J. C. Kemp Van Ee; secretary, H. C. Stratton; director, Charles Ladd.

The report for the year ending August 31, 1910, showed a profit of $355,272.10, out of which $198,220.99 has been paid in dividends.

Improvements also have been effected amounting to $148,940.30. A detailed report was read by Frank Fether, showing the company to be in excellent condition and stating that two additional wells will soon be brought in, which are expected to add largely to the present production.

The Palmer Oil Company has two wells that are producing close to 7,000 barrels a day. No. 1 well has put out a steady production of 1,500 barrels, nearly two years, and is considered the largest long-time producer in the State. No. 2, which was brought in about three months ago, has gradually increased in production. It is located near the No. 1 and came in at about 200 barrels per day. It has increased to 5,000 barrels a day.

PALMER INTERESTS PURCHASE PIPE LINE.

The old Graciosa pipe line to Port Hartford has been purchased by the combined interests of the Palmer Oil Company, the Palmer Annex Oil Company and the Palmer Jr. Company. It is now being put into shape for receiving the Palmer and Pinal production. It is expected the pipe line will be in condition for use about the first of the year.

The Princess, on the Tunnell ranch in Tepusquet, has completed its rig and will spud in soon. The formation in this neighborhood shows every indication of oil strata.

New Pennsylvania Fugler No. 1 is gradually getting under way. The new air compressor has been installed and at present the air line is down 1,300 feet and the tubing about 3,000, from which a good stream of oil has been forced out. The lighter oil is becoming more apparent and from indications a good well will be brought in when the compressor is given a thorough try-out.

The Summit Oil Company, on the Wilson place in the extreme northern end of the eastern extension to the Santa Maria field, is down 1,230 feet with No. 1 well in a blue shale formation with a 12½-inch casing and the hole will be cemented off within the next 20 feet. The Summit has made a record with its 18-inch stove pipe and its 12½-inch screw pipe for large sized pipe, having carried these strings further than any operator in the field.

The inaugural meeting of the Producers' Cementing Company was held September 30 in Santa Maria and the following directors were chosen: T. R. Finley, J. F. Goodwin, J. U. Stair, W. W. Orcutt, B. F. Brooks, F. F. Hill and A. A. Phillips. Copies of the agreement to be used between the operating companies and the Cementing company were sent out to the offices of each of the former members of the Oil Association, which has been succeeded by the Producers' Cementing Company, and the regular routine of corporation business was filed with the secretary of the company. J. F. Goodwin was elected president and E. H. Gates secretary.

The Associated Oil Company, on the Williams tract in Cat Canyon, will cement off No. 2 well shortly. The hole has been drilled too deep and 200 sacks of cement will be used in filling up the bottom of the hole, off the water bed. After the cement sets the well will be put on the beam and pumped from about 2,700 feet deep to test for oil.

The Treasure Oil Realty Company's Hall & Hall well No. 3 in the main field is again being drilled. It has been a good producer for a number of years, but the management desired to deepen it after production had fallen off and the hole will be drilled to about 3,900 feet before finishing.

The Radium Oil Company in the main field is now running down its ten-inch casing after having cemented off the 12½-inch at over 2,000 feet in the No. 2 well. No. 1, which is being pumped about 500 feet off the bottom, is producing an average of 50 barrels per day. This well is one of the deep holes being about 3,900 feet, but the oil is pumped from a much shallower depth.

Western Union No. 41, one of the old producers deepened to 3,880 feet, has been finished and a thorough test for oil will be made at that depth. The drill was stopped in a light oil sand which gives evidence of a higher gravity oil than at the old mark. No. 43 on this property was put on the pump last week and has started out like a substantial well, the preliminary test showing about 100 barrels per diem.

The Dome Oil Company's Blochman No. 3 is down 2,440 feet in blue shale with the water in the upper stratum thoroughly shut off by the late cementing process. No. 4 and No. 2 are both pumping and No. 1 will be put to test as soon as the sump holes are in readiness to take care of the oil.

T. R. Finley and Jos. McDonnell, directors of the Orcutt Oil Company whose property is in the Lompoc field, have resigned their position on the board, their interests in the company having been purchased by John Baker Jr., of San Francisco. Mr. Finley also resigned the presidency of the company, which he has held since its inception.

The Brooks Oil Company, operating in Cat Canyon south of the Palmer Stendel property, is down 2,300 feet with No. 2 in a heavy shale formation with the 8-inch casing. Tar sand and oily shale formations drilled up at this depth indicate that this ought to be a comparatively shallow well.

The Enterprise Oil Company, on the Gwin lease, has its first well down 1,000 feet with a 12½-inch screw pipe. The Enterprise leased this property from the Brooks Oil Company and is acting upon a co-partnership basis.

The Palmer Blochman No. 5 is suspended, awaiting a cementing job at 1,287 feet. The 12-inch bit was lost in the hole at this depth and will be cased off prior to carrying down another string of casing. No. 4 is in oil sand at 2,800 feet and will probably be finished up before the 2,900 mark is reached. No. 3 will be finished up shortly as the drill is now turning out a heavy stratum of oil sand. No. 6 on the new location has just spudded in.

GREAT NORTHERN ORDERS OIL BURNERS.

It has been announced at St. Paul, Minn., that the Great Northern read has ordered ten locomotives to be equipped with oil-burning boilers. They will be used on the Spokane, Portland and Seattle road, one of the Hill Western roads. Other Western railroads have undertaken changes that will convert many of the coal-burning locomotives into oil burners. The Oregon Trunk line will also use oil-burning locomotives. President John F. Stevens, who heads the Hill lines West, is a believer in oil burners, but it is not thought that the Eastern end of the roads will take up the plan, as it is not economical to have the oil burners too far removed from the California base of fuel supply.

VENTURA NOTES

The Gates Oil Company in the Santa Paula field has spudded in well No. 1 and is now down about 450 feet with 12½-inch casing. The Gates is located about an eighth of a mile east of the Canadian Queen.

The Big Sespe Oil Company in the Big Sespe district is running two strings of tools still. Well No. 5 is said to be about 1,000 feet down and No. 6 reported at 500 feet.

The Pyramid in the Santa Paula field is considerably past 1,700 feet with a strong gas pressure, which occasionally forces oil over the top of the casing. A good well is looked for.

The Ventura Oil and Development Company is progressing nicely.

Well No. 1 on the Dixie National is reported to be making 100 barrels of oil per day, while No. 2 has been spudded in.

Eleven distinct fields are being operated in Ventura County, as follows: Adams Canyon, Santa Paula, Ojai and Sisar, Big Sespe, Little Sespe, Four Forks, Barksdale, Torrey, Hooper Creek, Piru and Topo.

Following is the August record of the Ventura district: Wells producing, 230; idle, 10; drilling, 30; shut down, 18; deepening, 4; completions, 6. Production last month, 45,000 barrels; for year ending June 30, 463,211.

RAMONA HOME OIL COMPANY BEGINS OPERATIONS.

The Ramona Home Oil Company is the name selected for a new corporation which has a twenty-year lease on a one-eighth royalty basis, on 440 acres of oil lands in Section 12, 4-18, Ventura County. The lands lie due east of the well-known Modello wells and a little north of the Union Oil Company's Torrey producers. Also, it is no great distance from the Ventura Oil and Development Company's property. Mr. Frank Daniels, manager of all the Venturia Oil Development leases, states that the new company is composed of "fine people" and says that they deserve all the credit and help which can be given them. They have a nice proposition. The capital stock of the company is 500,000 shares, par value of $1 each; no preferred stock nor bonded indebtedness. Following are the officers and directors: P. J. Bolin, president, Los Angeles, Cal.; A. F. Frame, vice-president, Redlands, Cal.; Harry Weaver, secretary, Los Angeles, Cal.; O. E. Ohmstede, treasurer, Redlands, Cal.; E. A. Truby, Los Angeles, Cal.; Geo. W. Sweesy, Redlands, Cal.; C. A. Over, T. B. Miller, G. E. Delavan Jr., Los Angeles, Cal., attorney and counsel for the company.

The Liberty's well No. 2 on the Sulphur Mountain district, Ventura County, has run into a stratum containing water, oil and gas which are continually flowing up into the rig. Every time the tools are removed this combination of substances is thrown two-thirds the way to the top of the derrick. This action is said to indicate that the water is a seepage from above into the oil sand and the stratum is being shut off and as soon as this job is completed the hole will be sunk farther for the big oil sand thought to be not more than fifty feet below.

RETORT SMOKE FOR OIL.

News comes from Connellsville, Pa., that preparations are being made at one of the large coke-oven plants there to extract oil from the coke smoke. Already by means of retort ovens, coal tar, ammonia and a number of other substances are obtained from the waste of the ovens, and to these by-products is to be added a light and highly explosive oil.

GENERAL NOTES

OIL IN NAVAL VESSELS.

(From Government Advertiser.)

Liquid fuel may not entirely displace coal in the navy, but at least it is to be among the munitions of war on board ship. The new destroyers are, for the most, on an exclusively oil-burning basis, and the liquid fuel is to be furnished the battle-ships.

The first contracts for fuel for the navy have been awarded the Texas Company and the Sun Company. The oil is intended for the new battle-ships and those torpedo-boat destroyers which will subsist upon liquid fuel. The Texas Company has the contract for deliveries at Portsmouth, Boston, Providence, Newport, New York, Baltimore, Annapolis, Washington, Norfolk, Charleston, Pensacola, Key West, New Orleans, Guantanamo and Port Arthur, Texas, with distributing point at Marcus Hook, Pa.

The contracts provide for deliveries as may be ordered up to as much as 3,000,000 gallons. The deliveries for a torpedo-boat will amount to about 100,000 gallons, and those for battle-ships to 130,000, those for an oil barge 150,000, and those to a tank ship 1,400,000 gallons. Arrangements have been made to ship to the ports mentioned from the nearest distributing points in either oil barges or tank cars. Port Arthur has been included in the contracts because it is the outlet of the fuel oil in Texas, and at that port the cheapest prices are obtainable. Later, when the Naval Department has available a tank ship, that vessel will, in all probability, be ordered to Port Arthur and loaded directly from the oil suppliers' tanks. The specifications for fuel oil were prepared by the Bureau of Steam Engineering, the Bureau of Supplies and Accounts, and the aid for inspections, Rear Admiral Aaron Ward, who has given considerable attention to this subject.

One of the greatest difficulties which confronted the department was the fact that at none of the commercial distributing points did the oil suppliers carry the oil required for any of the ships, and it has been necessary to obtain special stocks of oil for this purpose. The specifications are very thorough, including the method of measurement, the mechanical and physical characteristics of the oil, with a high flash test of 200 degrees F., close cup, with a minimum amount of sulphur so as to avoid danger when in use. Arrangements are being made by the Bureau of Yards and Docks for the erection of steel storage tanks at Bradford, R. I., Norfolk, Charleston, Key West, Guantanamo and San Juan. Each tank will be about 35 feet in diameter by 30 feet high. The Navy Department is expending about $200,000 for the first year in the acquisition of fuel oil.

TEXAS COMPANY LISTS ON NEW YORK EXCHANGE.

Shares of the Texas Company, incorporated for $36,000,000, have been listed on the New York Stock Exxchange. The report submitted to the officials of the Exchange showed the following income account for the twelve months ending June 30, 1910: Gross earnings from sales of oil and other revenue, $9,848,770; less operating expenses, $5,562,754; less interest and taxes, $374,222; net earnings, $3,911,793; less added to insurance reserve during the year, $250,000; less added to sinking fund and depreciation account, $998,921; leaves available for surplus and dividends, $2,662,872; dividends paid, $1,562,872; carried to surplus, $1,100,000. Of the total authorized capital stock $27,000,000 has been entered on the regular list of the Stock Exchange.

LATEST QUOTATIONS OF SAN FRANCISCO AND LOS ANGELES STOCK EXCHANGES.

(Note: Where there was no quotation on either exchange the name of listed stock has been omitted).

Company.	Bid.	Asked.
Alma	75	1 00
Amalgamated Oil	50 00	55 00
Amer. Petroleum (pfd.)	....	98 00
Amer. Petroleum (common)	58 00	59 00
Amy	....	75
Apollo	07	10
Associated Oil Stock	43 50	44 00
Associated Bonds 5s	94 50	97 00
Bay City	2 25	....
Blue Moon	02	03
Brookshire	1 17½	1 22½
California Midway	51⅞	52⅛
California Oil & Gas	....	75
California Seaboard	....	30
Caribou	1 50	1 75
Claremont	1 45	1 70
Coalinga Central	....	45
Coalinga Mohawk	1 30	1 45
Coalinga National	20	22
Columbia	1 15	1 25
Consolidated Midway	23	24
Cresceus	....	75
Dabney	....	10
Del Rey	....	1 60
De Luxe	75	1 00
Dominion	70	90
Empire	....	2 75
Enos	1 05	....
Euclid	....	65
Four	....	15
Fulton	....	1 62½
Globe	09	14
Graciosa	....	50
Gypsy	35	50
Illinois Crude	40	42
Jade	25	30
Junction	33	40
Kern River	35	45
Linda Vista	....	25
Lucile	....	9 50
Maricopa National	32	35
Maricopa 36	2 20	3 00
Mascot	2 60	2 75
McKittrick	16	20
Monte Cristo	2 40	2 50
M. & M.	25	50
Nevada County	15	....
Nevada Midway	16	17
New Penn. Petroleum	75	80
Occidental	15	....
Pacific States Petroleum	33	....
Paraffine	....	1 00
Patricia	....	50
Palmer	1 32½	1 35
Peerless	3 00	5 00
Piedmont	10	15
Pinal	....	6 25
Premier	85	90
Record	....	6 00
Republic	49	55
Sacramento	1 00	....
S. F. & McKittrick	15 00	....
Sauer Dough	....	2 00
Section 25	22 00	25 00
Sesnon	8 00	....
Shawmut	....	50
Silver Tip	1 25	....
Sovereign	12	....
S. W. & B.	41	45
Sterling	2 25	....
Sunset Monarch	....	2 00
Superior	21	25
Traders	75 00	100 00
Turner	1 15	1 25
Union	106 00	106 25
United Oil	56	60
United Petroleum	104 75	108 00
West Coast (common)	....	40 00
Wabash	1 00	1 50
Wolverine	40	50
W. K. Oil Co.	2 50	2 60
Western Union	....	150 00
Yellowstone	46	50
Storage Certificates	34	50

LOS ANGELES QUOTATIONS.

(Not quoted above.)

Company.	Bid.	Asked.
American Crude Oil Co.	....	50
Central	1 84	1 88
Cleveland Oil Co.	02	02½
Continental	....	35
Fullerton Oil	....	5 00
Mexican Pet. Ltd. (pfd.)	70 00	70 25
Mexican Pet. Ltd. (com.)	36 25	....
Olinda Land Co.	....	65
Perseus	....	30
Piru Oil & L. Co.	20	....
Rice Ranch Oil Co.	65	80
Section 6 Oil Co.	....	50
Union Provident	105 50	107 00
Oleum Dev. Co.	04	04¼

CONTEMPORARY MAGAZINE NEWS.

News which will be more or less of a surprise to those who have not already heard it, is the absorption by the little "Oil Age Weekly," a fine little weekly edited by William Nelson Shell of Los Angeles, of the "Oil Industry," the well-edited magazine which Mr. Allen G. Nichols has had charge of for so long. The "Oil Industry" was the second oldest oil magazine in the State ("The California Derrick" being dean of all oil magazines now in existence in California), and its passing will be regretted by many. Its good will, subscribers and advertising have now been taken over and the magazine which appears weekly, the "Oil Age," is a consolidation of the two papers. We are doubtful if the "Oil Age" will be any better than the magazine which Mr. Nichols edited with such signal success, but at least it can be said for it that the first edition was good, also that it was beautifully embellished by photographs of the Editor and business manager; and what more could one ask?

The "California Oil World" and the "Los Angeles Mining Review" have both published special editions which are a credit to the oil industry of this State. They are profusely illustrated; the "Oil World" is in truth the best illustrated special edition of an oil magazine or paper which has ever appeared in this State.

During the rush of getting out the last edition we forgot to credit the "San Francisco Sun" for their courtesy in allowing us the use of their photograph of Col. Timothy Spellacy. We hope that this late reparation will show our appreciation of their kindness.

Mr. Sidney Norman, Editor of the "Los Angeles Mining Review," has kindly allowed us the use of two photographs, one of them showing Gifford Pinchot and party standing on a pier built over the Lakeview gusher's basin, the other an excellent photograph of the Consolidated Midway's huge gusher going full force. It is needless to say that we thank Mr. Norman, whose courtesy and kindness are very well known among the fraternity.

PRODUCERS AUGUST PRICE WAS 46c PER BARREL.

The August report of the Independent Producers' Agency shows that the companies affiliated with the organization will receive forty-six cents per barrel for their August productions. For the month just closed it is estimated the price which the agency members will receive for their output will be equal to that paid for August. However, during September the net returns will be less because of deductions that will necessarily be made for storage.

ORIGIN OF PETROLEUM

5—Analysis of Hydrocarbons—Medium Heat Coal Tar.

Paraffins		4%
Olefins		8%
Acetylens		1%
Cycloparaffins and Benzenes		40%
Probably only a trace of cycloparaffins.		
Napthalenes and Anthracenes		
Solid Napthalene	12%	
Liquid Methyl-napthalenes	31%	
Anthracenes	4%	
		47%
		100

Or, Aliphatic bodies, 13%, Aromatic bodies, 87%.

In certain forms of coke oven, the best coking coals are carbonized at a moderate red heat, giving a product rather similar to the foregoing. The tars thus produced resemble medium heat retort tar—the analysis of a sample of such tar is as follows:

6—Proximate Analysis—Medium Heat Coke Oven Coal Tar.
Specific Gravity (Water—1.00) 1.17.

Benzole or Naptha		1%
Creosoting Oil		
Tar Acids (Phenols)	4.5%	
Tar Bases (Pyridines, etc.)	1.8%	
Napthalene	8.5%	
Liquid Hydrocarbons	23.5%	
Anthracene	1.7%	
		40%
Pitch		
Pure Bitumen	41%	
Free Carbon	18%	
		59%
		100

The commercial products from this tar are the same as those from the preceding sample.

7—Analysis of Hydrocarbons—Medium Heat Coke Oven Coal Tar.

Paraffins		8%
Olefins		7%
Acetylens		1%
Cycloparaffins and Benzenes		25%
Probably only a trace of cycloparaffins.		
Napthalenes and Anthracenes		
Solid Napthalene	34%	
Liquid Methyl-napthalenes	20%	
Anthracene	5%	
		59%
		100

Or, Aliphatic bodies, 16%, Aromatic bodies, 84%.

The next material in the order of composition is Russian petroleum. I am not personally familiar with this oil, and the following figures are largely taken from Allen, Redwood and other sources. The commercial analysis is an average furnished to Redwood by the Ragosine Company. As to the chemical composition, the results given are deducted from a large number of conflicting statements by various writers, but I think that they come close enough to the actual composition to justify the position in the scale in which this oil is placed:

8—Proximate Analysis, Russian Petroleum.

Specific Gravity from 0.882 to 0.954—28.7 to 16.7 deg. Beaume.

Benzine, 0.725—63 deg. Be.	1%
Gasoline, 0.775—50 deg. Be.	3%
Kerosene, 0.822—40 deg. Be.	27%
Pyronaptha (132 deg. Flash) 0.858—33 deg. Be.	12%
Lubricating Oil, 0.890 to 0.895—27 to 24.5 deg.	27%
Cylinder Oil, 0.915—33 deg. Be.	5%
Vaseline, 0.925—21 deg. Be.	1%
Residuum and loss	24%
	100

The resiuum is less greasy than that from Pennsylvania crude, and less asphaltic than that from California. I believe that the quality of the products corresponds rather closely with that of similar California oils:

EIGHTEEN—OIL

9—Analysis of Hydrocarbons—Russian Petroleum.

Paraffins		Trace
Olefins		20%
Acetylenes (probably)		Trace
Cycloparaffins and Benzenes		
Cycloparaffins	70%	
Benzines	10%	
		80%
Napthalenes and Anthracenes		Trace
		100

Or, Aliphatic bodies, 20%, Aromatic bodies, 80%.

In at least one county in California are found small amounts of a very peculiar heavy oil, of a strong green color, red in thin layers, and practically free from asphalt. No names can be applied to any of the fractions from this oil, as they do not correspond to any commercial products, but the following will give an idea as to its physical makeup:

10—Proximate Analysis—Colusa County Petroleum, California.
Specific Gravity, 0.962—15.5 deg. Beaume.

Fraction 1, 0.915—23.0 deg.	Viscosity 1.5	35%
Fraction 2, 0.939—19.0 deg.	Viscosity 2.13	8%
Fraction 3, 0.954—16.5 deg.	Visocsity 4.50	9%
Fraction 4, 0.965—15.0 deg.	Viscosity 10.00	13%
Fraction 5, 0.993—11.0 deg.	Viscosity 18.00	12%
Fraction 6, 1.028	Viscosity 42.02	13%
Fraction 7, 1.030	Viscosity 85.00	4%
Asphalt	Soft	6%
		100

11—Analysis of Hydrocarbons—Colusa County Petroleum.

Paraffins		None
Olefins		20%
Cycloparaffins and Benzenes		None
Acetylens and Benzenes		45%
Probably largely cycloparaffins.		
Napthalenes and anthracenes		
Solid Napthalene	None	
Liquid Methyl-napthalenes	35%	
Anthracene	Trace	
		35%
		100

Or, Aliphatic bodies, 20%, Aromatic bodies, 80%.

It should be said that there is more or less guess work about the separation between the two aromatic groups. I feel quite certain that the olefins are about correct, but the separation between the higher cycloparaffins and the napthalene homologues is difficult. There is no question that this oil consists very large of aromatic compounds as, among other things, it may be repeatedly distilled under normal pressure and without steam, without any material decomposition. This would rather indicate a still larger proportion of higher benzenes and napthalenes

At one time there was, in at least one California town, a process in use which distilled coal at a very low temperature, as retort temperatures are figured, that is, a low red heat.

The tar produced in this plant from ordinary coking coal was very different from the higher heat tars, being much thinner, and having a rather flat and oily odor. The commercial analysis of this tar was as follows:

12—Proximate Anaylsis—Low Heat Coal Tar.

Specific Gravity, 1.087.

Benzole or Naptha		6%
Creosoting Oil		
Tar Acids (Phenols)	10.8%	
Tar Bases (Pyridines, etc.)	1.4%	
Napthalene	Trace	
Liquid Hydrocarbons	23.8%	
Anthracene	Trace	
	——	36%
Pitch		
Pure Bitumen	54%	
Free Carbon	4%	
	——	58%
		100

The commercial products from this tar were the same as those from preceding samples, though the Benzole would probably have been worthless for chemical purposes.

13—Analysis of Hydrocarbons—Low Heat Coal Tar.

Paraffins		11%
Olefins		18%
Acetylens (probably too high)		4%
Probably largely benzenes.		
Napthalenes and Anthracenes		
Solid Napthalene	Trace	
Liquid Methyl-napthalenes	30%	
Anthracene	Trace	
	——	30%
		100

Or, Aliphatic bodies, 33%, Aromatic bodies, 67%.

(To be concluded.)

ADVANCE SEPTEMBER PRODUCTION FIGURES.

The oil production for California for September is reported to be 6,601,960 barrels, distributed as follows:

Southern Field—Salt Lake, Sherman, 235,100; Whittier Coyote, 103,900; Los Angeles City, 3,800; Newhall, 1,300; Fullerton Brae Canyon and Puente, 430,000; Ventura County, 55,000.

Coast Fields—Santa Maria, Lompoc and Cat Canyon, 77,500; Summerland, 5,300.

Valley Field—Coalinga, 1,423,100; Kern River, 1,035,140; Sunset, 702,420; Midway, 138,500; McKittrick, 435,200.

This is a decrease of 131,099 barrels from the August returns, the figures for that month being 6,743,159.

ALEXANDER
QUALITY PIPE

EVERY good business man realizes that in price only incidental—quality is essenial Representations are made by quality. Price will always, sooner or later, and usually sooner, prove its own undoing. Any sale built on price must in the end prove unsatisfactory.

EVERY LENGTH OF ALEXANDER PIPE
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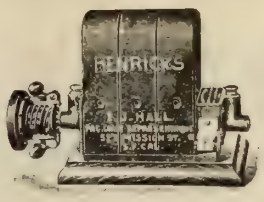

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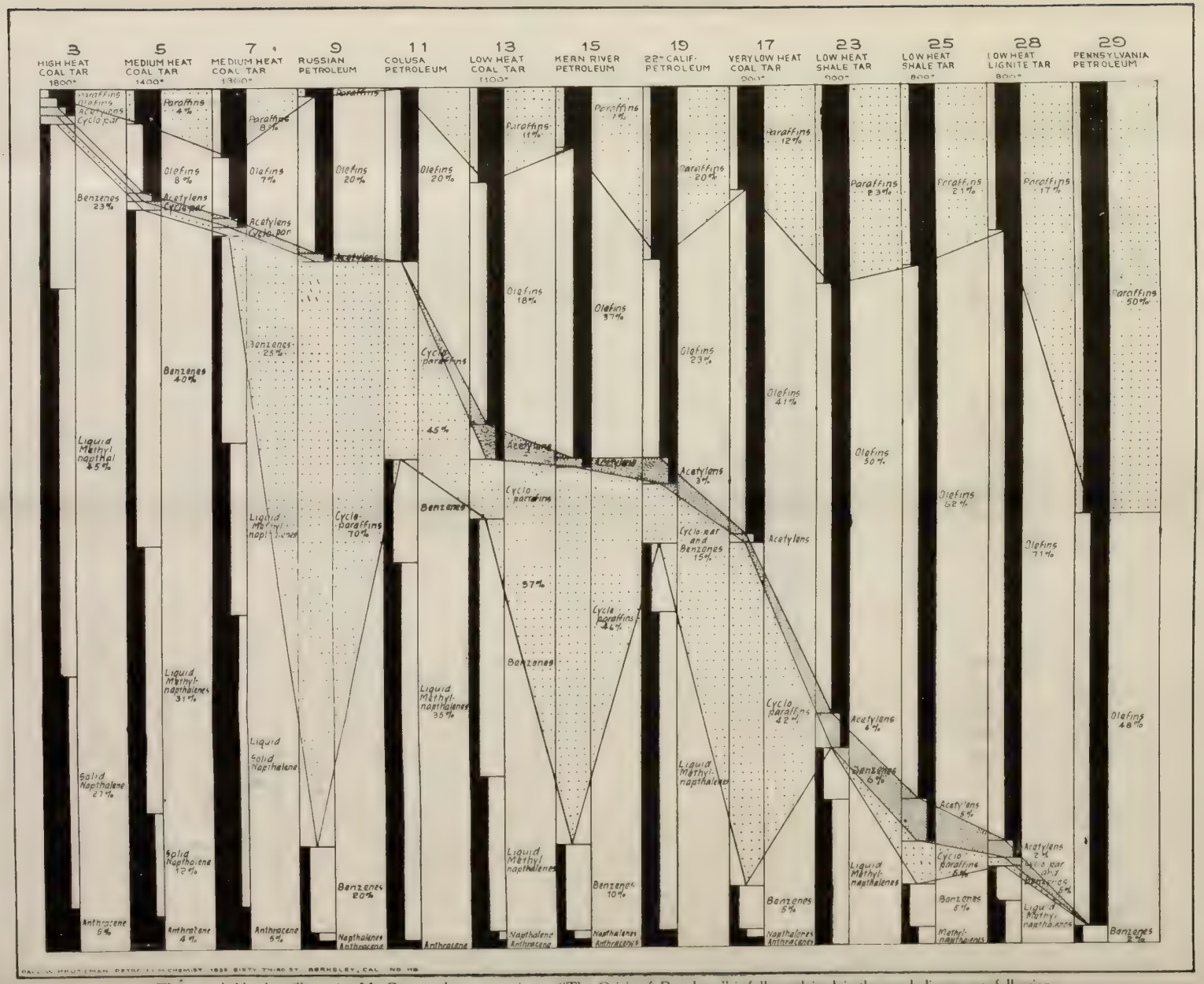


This remarkable chart illustrating Mr. Prutzman's great treatise on "The Origin of Petroleum" is fully explained in the concluding papers following.

CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 3 | San Francisco, Cal., November, 1910 | No. 6

ORIGIN OF PETROLEUM

Concluding Papers

By PAUL W. PRUTZMAN, Geologist, Chemist and Author

California's brilliant oil expert, whose writings and works are everywhere recognized in oil and scientific circles.

The characteristic properties of California heavy petroleum are too well known to need any elaboration. A sample of Kern River oil shows the following:

14—Proximate Analysis—Heavy Kern River Petroleum, Cal.

Specific Gravity, 0.964—15.2 deg. Be.

	Gravity.	Flash.		
Fraction 1	39.6 deg.			2.79%
Fraction 2	32.8 deg.	150		3.39%
Fraction 3	28.0 deg.			7.08%
Fraction 4	24.2 deg.	246 deg.	Viscosity 2.6	5.97%
Fraction 5	22.5 deg.	276 deg.	Viscosity 3.1	3.46%
Fraction 6	21.3 deg.	308 deg.	Viscosity 5.6	2.07%
Fraction 7	19.7 deg.	320 deg.	Viscosity 10.5	5.38%
Fraction 8	18.4 deg.	337 deg.	Viscosity 19.6	5.63%
Fraction 9	17.5 deg.	333 deg.	Viscosity 42.0	4.90%
Residum	14.0 deg.	480 deg.	Thick grease	20.33%
Asphalt	Grade "E," rather soft			39.00%
				100.00%

15—Analysis of Hydrocarbons, Heavy Kern River Petroleum.

Paraffins		7%
Olefins		37%
Acetylens		Trace
Cycloparaffins and Benzenes		
Cycloparaffins, estimated	46%	
Benzenes, estimated	10%	
		56%
Napthalenes and Anthracenes		Trace
		100%

Or, Aliphatic bodies, 44%, Aromatic bodies, 56%.

The lighter asphaltic oils of California show a larger percentage of light products and of aliphatic hydrocarbons, but are otherwise quite similar to the above.

16—Proximate Analysis—Light California Petroleum.

Specific Gravity, 0.9138—23.2 Be.

Gasoline, distilling below 150 deg. C. Gravity 57 deg.	5.3%
Kerosene, 150/270 deg. C. Gravity 39.3 deg.	31.3%
Distillate Above 270 deg. C. Gravity. 33.2 deg.	12.6%
Lubricating Stock, Gravity 19.5 deg.	31.1%
Asphalt, Grade "E"	19.7%
	100%

17—Analysis of Hydrocarbons—Light California Petroleum.

Paraffins		12%
Olefins		
Liquid	39%	
Solid	2%	
		41%
Acetylens		Trace
Cycloparaffins and Benzenes		
Cycloparaffins	42%	
Benzenes	5%	
		47%
Napthalenes and Anthracenes		Trace
		100%

Or, Aliphatic bodies, 53%, Aromatic bodies, 47%.

On distilling coal at the lowest heats obtainable artificially, we produce a still lighter and more aliphatic tar, and leave a residue of very soft coke containing considerable volatile matter. A sample of good semi-coking coal, distilled in the laboratory in a vertical, continuous retort patterned after a

Scotch shale retort, gave the tar whose analysis follows. At the point where the coke was discharged the heat was a dull red, but as these retorts feed slowly into the heated portion, and the vapors pass through the cold material on their way to the condenser, much of the tar is distilled off at a still lower temperature, probably as low as 800 deg. Fahrenheit. This tar had a foul odor, due to sulfur compounds and acetylens, and was a thin, brownish liquid, solidifying at about 65 deg. Fahr., on account of the large amount of solid paraffine contained:

18—Proximate Analysis—Lowest Heat Coal Tar.

Specific Gravity, 0.98—12.9 deg. Be.

Distilling below 270 deg. C. Gravity 37 deg. Be.		
Tar Acids	11%	
Tar Bases	2%	
Liquid Hydrocarbons, 26 deg. Be.	19%	
Solid Paraffine	2%	
		34%
Residue, a Thick Grease		
Solid Paraffine	3%	
Liquid Hydrocarbons	54%	
Asphalt, greasy	9%	
		66%
		100%

19—Analysis of Hydrocarbons—Lowest Heat Coal Tar.

Paraffins	
Liquid Paraffins	15%
Solid Paraffins	5%
	20%
Olefins	23%
Acetylens	3%
Cycloparaffins and Benzenes, undivided	15%
Napthalenes and Anthracenes	
Solid Napthalene	None
Liquid Methyl-napthalenes	39%
Anthracene	None
	39%
	100%

Or, Aliphatic bodies, 46%, Aromatic bodies, 54%.

In some parts of California a shale is found containing a slight amount of soluble bitumen (asphalt) and a much larger amount of coal or lignitic material. This shale is hard and dense, and of a gray black color. The organic matter is evenly distributed through the mass, and no particles of organic matter are visible, even under a low power lense. A rough analysis of the shale is as follows:

20—Analysis of Bituminous Shale, California.

Water, total	6.50%
Soluble Bitumen (Asphalt)	1.95%
Insoluble organic matter (Coal)	6.61%
Mineral Matter	84.94%
	100.00%

On distilling this shale under the same conditions noted for the last sample, the yields were:

21—Distillation of Bituminous Shale, California.

Ammonia Liquor	6.50%
Tar	3.00%
Gas	5.60%
Residue, containing 4.1% carbon	84.90%
	100.00%

The tar from this distillation was a thin brownish liquid, containing considerable sulfur, and having a very rank and fetid odor. It solidified at slightly below 60 deg. Fahr., but contained less solid paraffine than the last sample (analysis 18).

22—Proximate Analysis—Low Heat Shale Tar, California.

Specific Gravity, 0.9736—13.8 deg. Be.

Below 150 deg. C.	Gravity 43.6 deg.	4.14%
150 to 200 deg. C.	Gravity 31.8 deg.	5.50%
200 to 270 deg. C.	Gravity 24.0 deg.	9.54%
Above 270 deg. C. A	Gravity 19.9 deg.	7.16%
Above 270 deg. C. B	Gravity 17.0 deg.	4.51%
Above 270 deg. C. C		12.75%
Above 270 deg. C. D	Gravity 12.5 deg.	39.38%
Refining Losses		6.62%
Coke		10.40%
		100.00%

The quality of the lighter products was low, due to the large proportion of unsaturated bodies, and to the percentage of benzenes. The heavier lubricating products were somewhat less viscous than products of equal gravity from California crude.

23—Analysis of Hydrocarbons—Low Heat Shale Tar, California

Paraffins		
Liquid Paraffins	20%	
Solid Paraffins	3%	
		23%
Olefins		50%
Acetylens		4%
Cycloparaffins and Benzenes. Probably all benzenes.		6%
Napthalenes and Anthracenes		
Solid Napthalene	None	
Liquid Methyl-napthalenes	17%	
Anthracene	Trace	
		17%
		100.00%

Or, Aliphatic bodies, 77%, Aromatic bodies, 23%.

In Scotland an important industry is based on the large scale distillation of a rather similar shale, which is distilled in vertical retorts, with continuous feed and the use of a large amount of steam. Every effort is made to keep the temperature as low as possible. This shale contains a larger percentage of lignitic material than the California shale just described, and yields from 30 to 50 gallons of tar or crude shale oil per ton, along with a large amount of ammonia liquor. This tar is of a dark green color, and freezes at about 90 deg. Fahr. An analysis given by Allen is as follows:

24—Proximate Analysis—Low Heat Shale Tar, Scotch.

Specific Gravity, 0.880—29.1 deg. Be.

Naptha	Gravity 53.0 deg.	4.0%
Burning Oil	Gravity 43.0 deg.	33.0%
Intermediate Oil	Gravity 34.7 deg.	1.6%
Lubricating Oil	Gravity 27.8 deg.	21.0%
Paraffine Scale	Melting Point 49.8 deg. C.	10.6%
Coke		5.6%
Refining Losses		24.2%
		100.0%

The products from this tar are very similar to the corresponding petroleum products, though they would not rank as first quality in this country. The raw tar contains notable quantities of phenols and bases, which are eliminated in the refining process, and in part account for the large refining loss. The pure hydrocarbons in this tar divide up about as follows:

25—Analysis of Hydrocarbons—Low Heat Shale Tar, Scotch.

Paraffins		
Liquid Paraffins	10%	
Solid Paraffins	11%	
		21%
Olefins		62%
Acetylens		5%
Cycloparaffins and Benzenes, undivided		10%
Napthalenes and Anthracenes		
Solid Napthalene	None	
Liquid Methyl-napthalenes	2%	
Anthracene	None	
		2%
		100%

Or, Aliphatic bodies, 88%, Aromatic bodies, 12%.

In Germany and Bohemia certain soft lignites, known generally as Brown Coals, are extensively mined. These soft coals are of great variety, some of them resembling our local coals, and in common with the latter are distinguished by giving an acid water on distillation, rather than an ammoniacal liquor, as in the case of the true coals. These coals are distilled for the production of mineral oils and paraffine, giving yields as follows (Redwood):

26—Distillation of Brown Coals, Germany.

Water (usually acid)	20% to 40%
Tar	2% to 10%
Gases	5% to 25%
Coke	25% to 60%

The tar is a thin brownish liquid, freezing at about 40 deg. Fahr. The products vary considerably in proportions, the averages being as follows (Redwood):

27—Proximate Analyses—Brown Coal Tars, Germany.

Specific Gravity, Ranging from 0.900 to 1.095.

	Boiling.	Gravity.	
Benzine	130 to 170 deg.	70 to 57 deg. Be.	2 to 6%
Burning Oil	170 to 220 deg.	41 to 29 deg. Be.	8 to 30%
Solar Oil	220 to 290 deg.	41 to 29 deg. Be.	12 to 50%
Lubricating Oils	290 to 320 deg.	29 to 25 deg. Be.	
Paraffine Oils, boiling above 320 deg.		27 to 24 deg.	1.5 to 12%
Asphalt			14 to 20%
Gases			3 to 10%
Water			5 to 20%

The descriptions of this material, which I have never had a chance to examine, are a little confusing, but from the work of a number of experimenters I deduce the following:

28—Analysis of Hydrocarbons—Low Heat Lignite Tar, Bohemia

Paraffines		
Solid Paraffines	10%	
Liquid Paraffins	7%	
		17%
Olefins		71%
Acetylens		2%
Cycloparaffins and Benzenes		5%
Probably mostly benzenes		
Napthalenes and Anthracenes		
Solid Napthalene	None	
Liquid Methyl-napthalenes	5%	
Anthracene	None	
		5%
		100%

Or, Aliphatic bodies, 90%, Aromatic bodies, 10%.

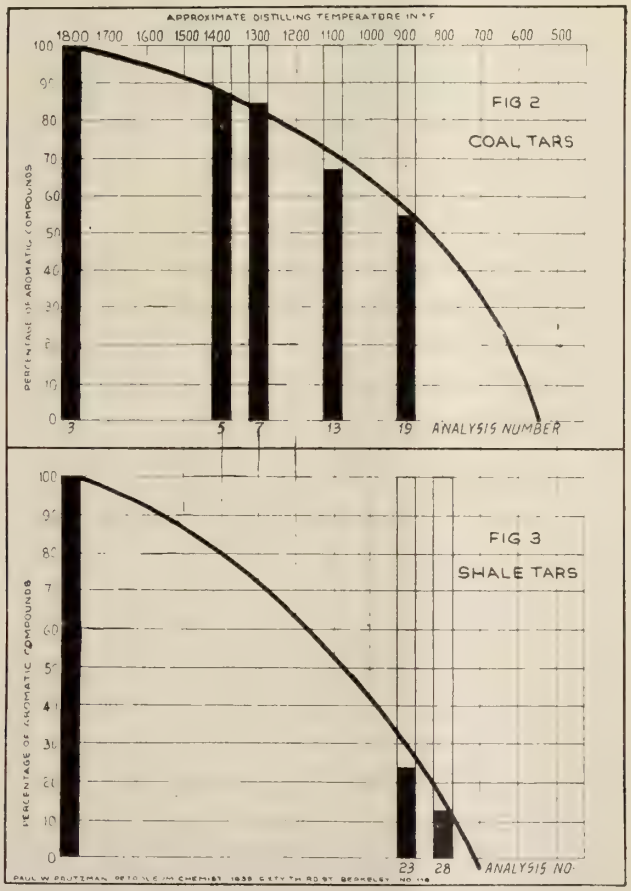
As said, this is an estimate, and doubtful as to details, but is based on enough data to justify the position on the scale assigned to this material. There is hardly a doubt that the oil from Bohemian "gagat" is closer in composition to the aliphatic petroleums than any other artificial distillation product.

This sample finishes our list of tars, but for comparison I add a separation of the hydrocarbons on a sample of Pennsylvania petroleum:

29—Analysis of Hydrocarbons—Pennsylvania Petroleum.

Paraffines		
Liquid Paraffins	40%	
Solid Paraffins	10%	
		50%
Olefins		48%
Acetylens		None
Cycloparaffins and Benzenes		2%
Mostly Benzenes		
Napthalenes and Anthracenes		Trace
		100%

* * * * *



For thorough explanation of this cut read the accompanying matter carefully

In the accompanying diagram the preceeding analyses are scaled, the length of each different weight of line representing the proportion of the corresponding group of hydrocarbons. The terminations of some of the percentage bars are connected by lines and the included portions of the diagram shaded, to call attention to the relative proportions of such groups in the various mixtures.

We have here three distinct classes of compounds. First, the aliphatic compounds, consisting of the paraffins and the olefins, with the acetylens as a sort of connecting link with the succeeding groups. As the analyses have been arranged in the order of their proportion of aliphatic compounds, the percentage of these groups taken together of course increases from left to right, or as the temperature decreases. The percentage of paraffins also increases in this direction, but not regularly, and it is probable that the proportion of paraffins to olefins depends on factors other than the distilling temperature alone.

Below the acetylens, which occur in small quantity and form the dividing line between aliphatic and aromatic compounds, we have the two remaining classes—the cycloparaffins and the aromatic compounds proper, the latter consisting of the benzenes, napthalenes, anthracenes, and other groups found in small quantity only, and not here named.

It will at once be noted that while both these classes occur in both the tars and the petroleums, the bulk of the aromatic bodies found in petroleums belong to the cycloparaffin class, while those found in tars belong principally to the higher aromatic groups. Just what the bearing of this fact may be I cannot state, as we know far too little regarding the heat reactions by which the cycloparaffins are formed to judge as to whether conditions suitable for their formation in quantity can exist in nature. But considering their position in the chemical scale, it is, I think, very probable that they would be formed in quantity by the repeated slow distillation of aliphatic petroleums. The cycloparaffins are not particularly characteristic of any of the artificial tars, and we are therefore deprived of the insight into their formation methods afforded in the case of the benzene hydrocarbons by a study of the various coal tars.

The only regularity in this table which is at all striking is that exhibited by the relation of the percentage of aliphatic compounds to the temperature of distillation. It will be noted that for any one class of materials, the coal tars for instance, the percentage of paraffins and olefins combined increases in what appears to be a definite relation to the decrease of distilling temperature. This is shown more plainly in Figure 2, where the percentage ratio on the coal tars is plotted against the temperature. The number of samples in this case is sufficient to give us a very fair curve, and while of course all the data is of a highly approximate nature, because of uncertainty as to both analyses and temperature measurements, still I believe that the curve indicated in the diagram is very close to a true one. It will be noted that the curve terminates at about 550 deg. Fahr., by which is meant that we would have to conduct our distillation at about this temperature in order to obtain from bituminous coal a tar consisting entirely of aliphatic hydrocarbons, or in other words a paraffin petroleum.

In Figure 3 I have plotted two of the samples of shale tar against temperature in the same manner, using a sample of high temperature petroleum tar (water gas tar) as initial point. The number of samples here is too small to construct a curve, and I have used a curve about the same as that indicated for coal tars, and terminating at 700 deg. Fahr. It should be noted that the samples analyzed lie so near the foot of the curve that, even were the latter a straight line, the results would be little altered. This curve indicates that a tar consisting entirely of aliphatic hydrocarbons could be produced at a temperature near 700 deg. Fahr. by the dry distillation of lignites or lignitic shales.

It should not be taken that because such temperatures as 700 deg. and 550 deg. are indicated by these curves, similar products could not be had at even lower temperatures. On the contrary, in the last case a tar containing only a small percentage of aromatic compounds is produced at about 800 deg. Fahr. in the course of a very rapid artificial distillation. We have every reason to believe that as such distillations must be conducted in nature, that is, with the utmost deliberation and at absolutely uniform and constant temperatures, the complete destruction of the lignite or coal could be brought about at very much lower heats. And while of course the total percentage of aliphatic compounds could never be greater than 100 per cent, it is highly probable that the percentage of olefins in such product would be very much less, and that of the paraffins very much greater, than in any tar so far artificially prepared. In other words, that such low temperature distillations of either coal or lignite would produce a mixture which, after its soluble constituents had been washed away, would contain the elements and the proportions which we find in the paraffin petroleums.

I am strongly of the opinion, considering the extreme slowness with which rocks containing organic matter could be brought into heated zones, and the equally slow rate of transmission of heat from centers of volcanic activity or chemical action, that most if not all petroleum is in its original condition a paraffin, or more properly an aliphatic petroleum, and that the heavy and the aromatic petroleums, such as those of California and Russia, are almost if not quite always the result of secondary action.

In order to illustrate the processes and results described above, I have prepared four sketches of a simple case in point.

In the first sketch (Figure 4) a river is discharging sediment into the shallow water off its mouth. The deposits are only commencing to form, close to the shore, and the entire coast line, both inland and ocean bed, are sinking at about the same rate as that at which sediments accumulate. These sedimentary deposits are supposed to contain more or less organic debris, varying with the richness and nature of animal and vegetable life both on land and in the shallow waters along the coast. The older rocks above which these new deposits are forming are supposed to be free from volatile organic matter, owing to having already undergone the processes here outlined.

In the second sketch (Figure 5) the shore line is still subsiding and retreating inland. A large mass of sediment has been collected and stratified, and subsidence has carried the lower portion into a zone of mild heat. It will be noted that in these sketches the level of any given temperature is placed at an even and constant distance below sea level, neither of which points is strictly according to the facts. As this is not a treatise on structural geology, it is unnecessary to go into even such details as are known regarding temperatures underground—it is sufficient for the present purpose that the temperature at any given distance below the surface at any one point on the surface is practically constant.

As the rocks situated as in this illustration would be saturated with water, a temperature of even 200 deg. Fahr. would cause rapid fossilization of the organic matter in the sediments reaching this depth. This explains, I think, why the hydrocarbons of petroleum are always such as we find in coal or lignite tars, and never such as are characteristic of the wood tars. No matter how the heat might be applied to sedimentary deposits, the rise of temperature would be so slow that every particle of organic matter must of necessity undergo that change, whatever it may be, which we describe as alteration or fossilization, long before a distilling temperature could be reached. Even at the surface, the conversion of wood into lignite proceeds very rapidly in the presence of water and a very mild heat. Our local peat beds, consisting of tule roots mixed with mud, are already very much altered, though of quite recent age, and under a temperature approaching 200 deg. this change must take place even more rapidly.

In the third sketch (Figure 6) the subsidence which permits the accumulation of sediments is supposed to have reached its limit. A great thickness of new formation has been collected, and the lowest parts of this deposit have been slowly lowered into a constantly increasing temperature, by which they have been completely deprived of volatile matter. Higher up, where the temperature is lower, organic matter is yet being distilled, and the oil is collecting above the zone of distillation, as being volatile at any temperature at which it would be produced, it could not pass down through the distilling zone.

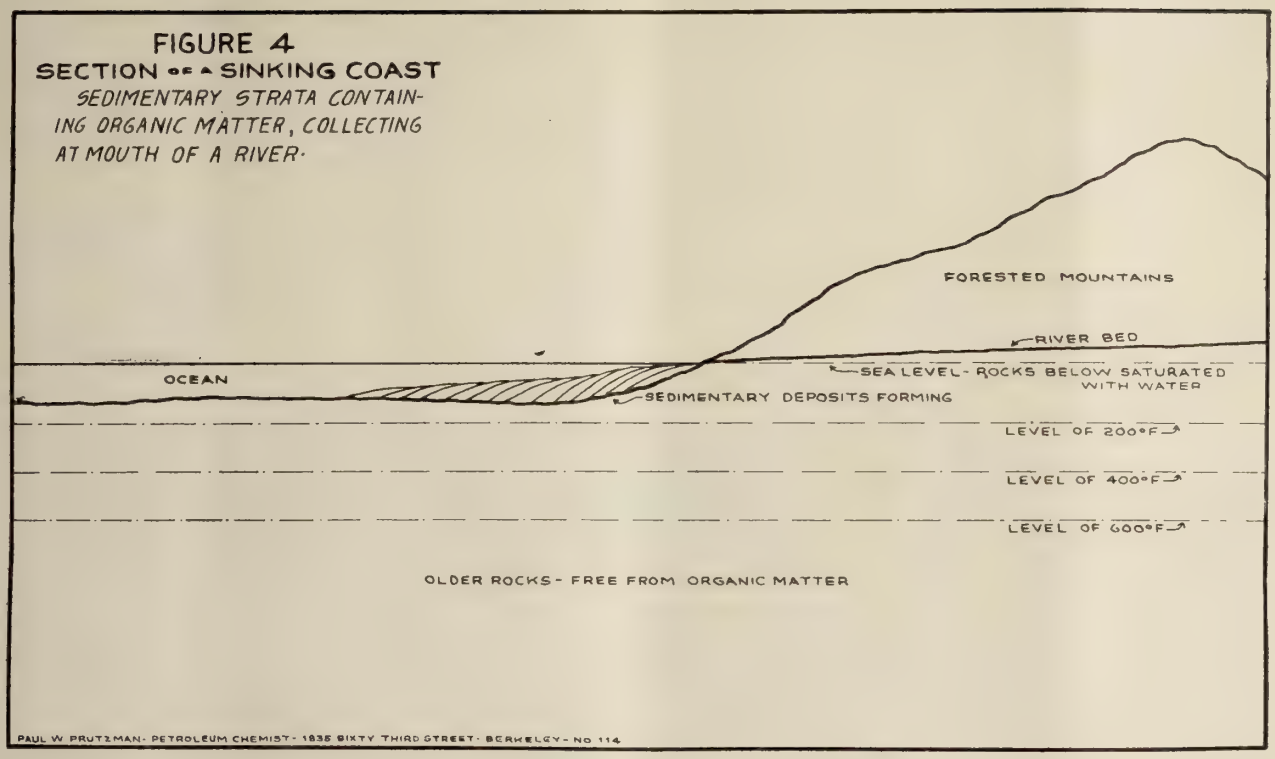


FIGURE 4
SECTION OF A SINKING COAST
SEDIMENTARY STRATA CONTAINING ORGANIC MATTER, COLLECTING AT MOUTH OF A RIVER.
FORESTED MOUNTAINS
RIVER BED
OCEAN
SEA LEVEL - ROCKS BELOW SATURATED WITH WATER
SEDIMENTARY DEPOSITS FORMING
LEVEL OF 200°F
LEVEL OF 400°F
LEVEL OF 600°F
OLDER ROCKS - FREE FROM ORGANIC MATTER
PAUL W. PRUTZMAN - PETROLEUM CHEMIST - 1835 SIXTY THIRD STREET - BERKELEY - NO 114

FIGURE NO. 4

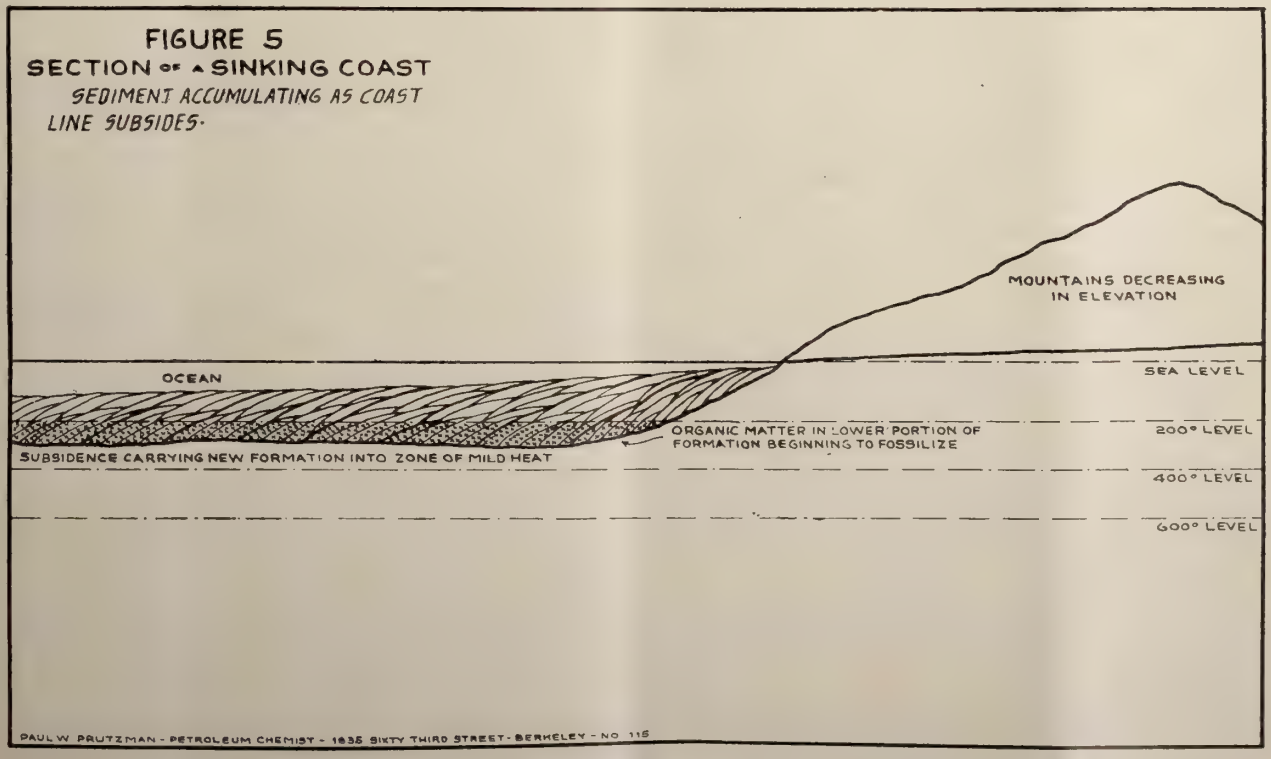


FIGURE 5
SECTION OF A SINKING COAST
SEDIMENT ACCUMULATING AS COAST LINE SUBSIDES.
MOUNTAINS DECREASING IN ELEVATION
OCEAN
SEA LEVEL
ORGANIC MATTER IN LOWER PORTION OF FORMATION BEGINNING TO FOSSILIZE
200° LEVEL
SUBSIDENCE CARRYING NEW FORMATION INTO ZONE OF MILD HEAT
400° LEVEL
600° LEVEL
PAUL W. PRUTZMAN - PETROLEUM CHEMIST - 1835 SIXTY THIRD STREET - BERKELEY - NO 115

FIGURE NO. 5

Higher up in the formation later deposits are still undergoing fossilization, and still higher is a layer of entirely unaltered deposits.

In the fourth sketch (Figure 7) the new deposits have been raised and more or less arched. The oil originally collected above the zone of distillation has been carried up as the rocks containing it were elevated, and the oil is being farther carried up by water pressure, the oil containing rocks being now at a level at which water may exist in liquid form. At the left end of the illustration the oil is shown following up the under side of impervious layers, and seeping away where these reach the surface. In the valley at the center a layer of alluvium has formed, and has sealed the ends of some of these channels, allowing oil deposits to collect, while below this valley the arching of the formation has produced pockets beneath which oil and gas are collecting.

This of course illustrates but a single case, and that, I believe, one of the least common. Being the simplest, it is best suited to the present purpose. But while the details as to earth movements, by which blocks of organic containing material are subjected to heat, and as to chemical and other forces by which heat is produced regardless of earth movement, are innumerable, the general principles of distillation and collecting would be the same in all cases. It is impossible to consider here the changes which the original product undergoes due to washing, chemical action, and repeated distillation and filtration, nor the mechanical processes by means of which oil is collected and again dissipated, raised, lowered, and caused to migrate horizontally for long distances. A volume might be written on such subjects, and this paper has already reached a tedious length.

To sum up, the theory above detailed as to the origin of petroleum is as follows:

That petroleum is produced by, first, the fossilization and, second, the destructive distillation of organic matter occurring in small proportions in sedimentary strata. This organic matter being in most cases largely vegetation with a small amount of animal fat, though in a few instances largely, and in very rare cases entirely of animal origin.

That this distillation takes place very slowly and at very low temperatures, the original product being usually what is described as a paraffin petroleum.

That the heat is supplied, in most cases, by the subsidence as a whole or in fragments of the organic strata into a zone of permanent heat, but in rare cases by local volcanic intrusion or by chemical action within the strata.

That the original light petroleum usually undergoes secondary changes, the bituminous elements being due to oxidation or sulfurization, while the lighter elements are lost by evaporation, fractional filtration or solution in salt water. Salt or alkaline waters also remove most of the acid and basic elements, and other changes are brought about by repeated distillation, which removes the heavier elements and tends to increase the proportion of aromatic compounds, and by filtration through shales and clays.

That most sedimentary strata have at one time or another yielded their quota of petroleum, but only in small quantities at any one time and place.

That the comparatively small amounts of oil thus formed have been concentrated by water currents, and at the same time dissipated by leakage and evaporation.

From which it follows—that but a small proportion of all the oil originally formed is now in existence, and of this part but a still smaller proportion is sufficiently concentrated to be of value.

That petroleum may and probably does exist wherever sedimentary rocks are found.

But that only where considerable earth movements are in progress is there any likelihood of finding profitable quantities.

But one point now remains to be considered—that is, whether such theories have any direct bearing on the search for petroleum. I would answer that they most certainly have.

If, as has been suggested, the point of origin of our petroleum deposits can always be found in immediately adjacent or subjacent strata, then our search for petroleum must be limited to such areas as give evidence, in the way of visible marine remains, that the raw material at one time existed in the rocks there found. That areas exist in which the petroleum may be ascribed to the rocks in contact with the productive formation I do not deny, but that this is the rule, I very much doubt. In my opinion the large part of all the sedimentary rocks have, at one time or another in their history, furnished more or less petroleum, though it does not follow that petroleum may now be found in the immediate neighborhood of such rocks. The presence of profitable deposits of petroleum will depend on the existence, within the general neighborhood, of large masses of sedimentary rocks of moderately recent age, the probability being always that the oil from the oldest rocks have been dissipated by earth movements, and that the very latest rocks have not yet been subjected to distilling conditions. Further, on the course of the principal underground water movements, which will tend to remove the oil from one area and concentrate it in another. And last, on the presence of suitable reservoirs, requiring usually a porous or finely fractured rock as an absorbent, impervious layers as retainers, and a gently folded structure without too much deep fracturing or faulting. Given such reservoir conditions (and they are much more rare than might be supposed) in a country composed of successive sedimentary deposits, petroleum will, I think, always be found at those points where underground water movements favor its collection. Indeed, could we from the surface map the direction and indicate the rapidity of water movements at various depths, we would have at hand data from which to determine with considerable certainty as to where profitable petroleum deposits would be found. But lacking, in most cases, any information as to underground water conditions, prospecting will probably always remain an enterprise involving a high degree of uncertainty. The fact remains, however, that a study of this factor is at present the most profitable in which students of this subject could engage.

These are theories, vague and indefinite in their very nature, and I am far from urging them, or seeking to convert those holding to other views. The well at the bottom of which truth is said to reside is a deep and narrow one, and all the light from all our little lamps will hardly illuminate its depths.

THE END.

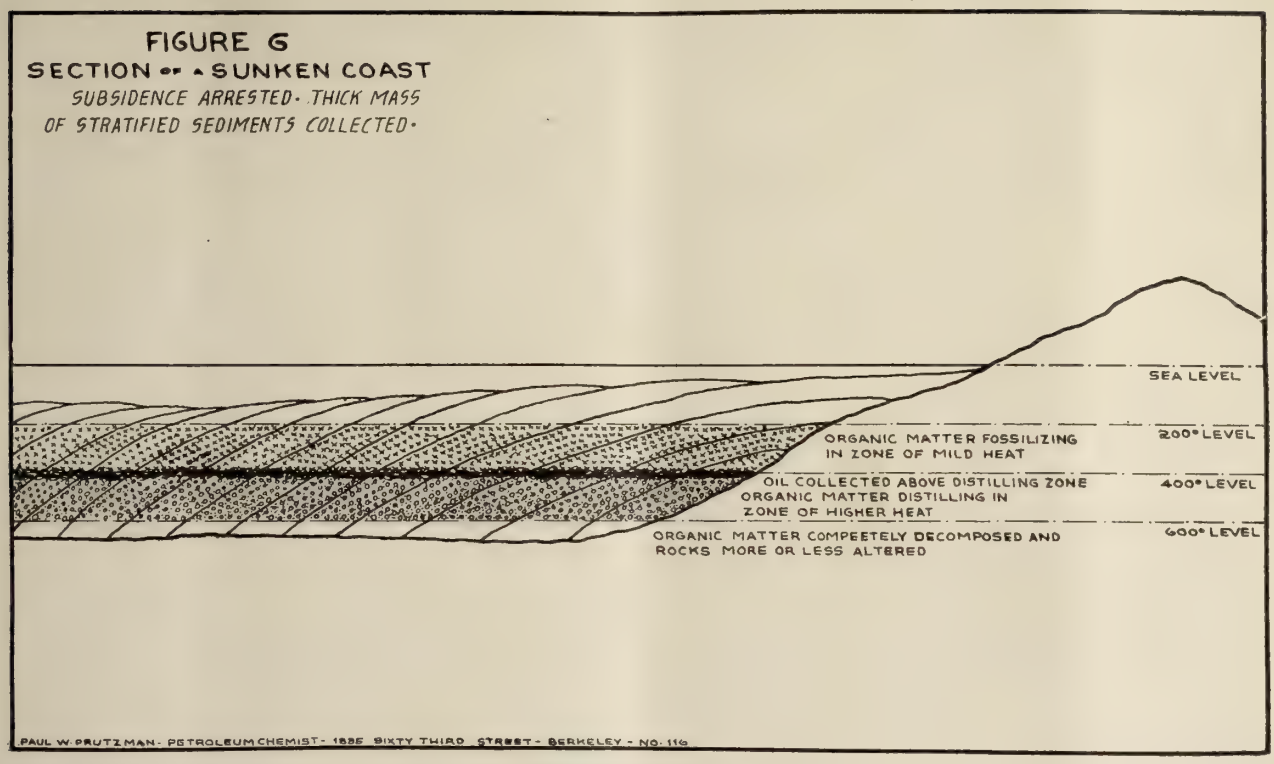


FIGURE 6
SECTION OF A SUNKEN COAST
SUBSIDENCE ARRESTED. THICK MASS OF STRATIFIED SEDIMENTS COLLECTED.
SEA LEVEL
200° LEVEL
400° LEVEL
600° LEVEL
ORGANIC MATTER FOSSILIZING IN ZONE OF MILD HEAT
OIL COLLECTED ABOVE DISTILLING ZONE
ORGANIC MATTER DISTILLING IN ZONE OF HIGHER HEAT
ORGANIC MATTER COMPEETELY DECOMPOSED AND ROCKS MORE OR LESS ALTERED
PAUL W. PRUTZMAN - PETROLEUM CHEMIST - 1835 SIXTY THIRD STREET - BERKELEY - NO. 116

FIGURE NO. 6

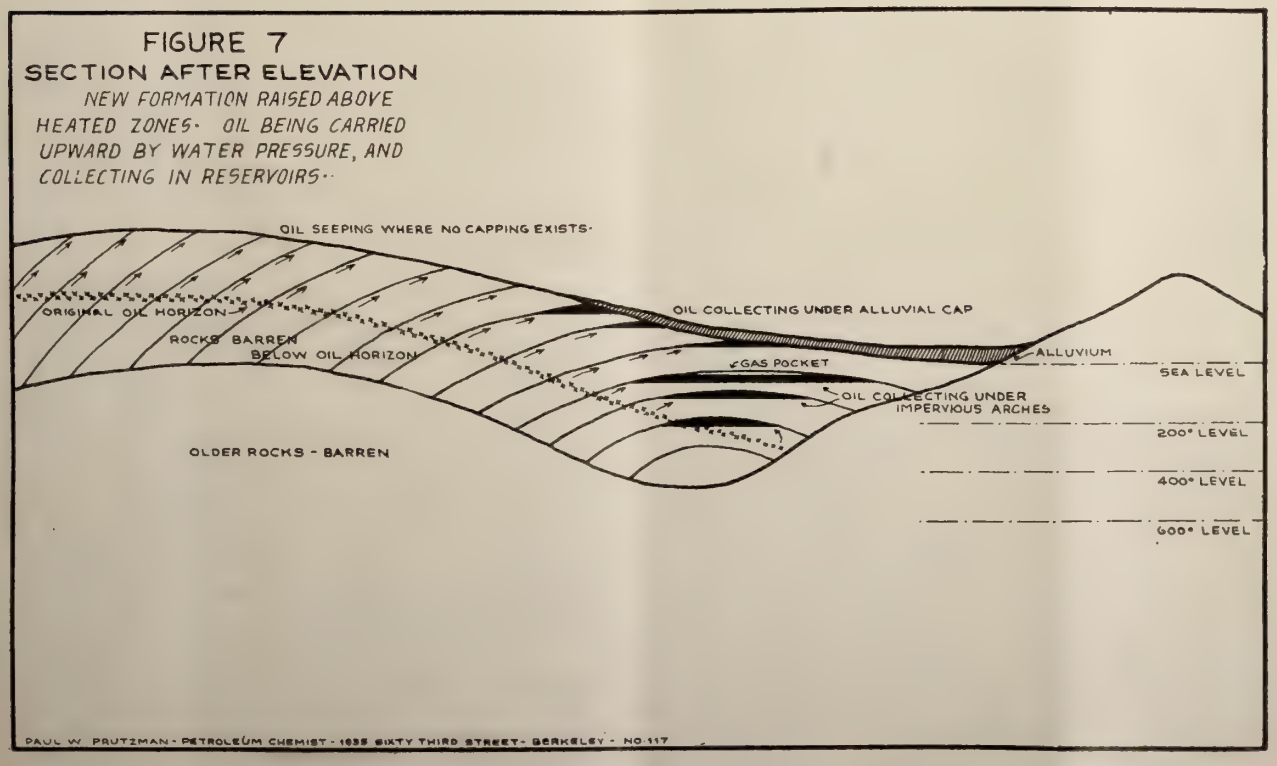


FIGURE 7
SECTION AFTER ELEVATION
NEW FORMATION RAISED ABOVE HEATED ZONES. OIL BEING CARRIED UPWARD BY WATER PRESSURE, AND COLLECTING IN RESERVOIRS.
OIL SEEPING WHERE NO CAPPING EXISTS.
ORIGINAL OIL HORIZON
ROCKS BARREN BELOW OIL HORIZON
OIL COLLECTING UNDER ALLUVIAL CAP
ALLUVIUM
GAS POCKET
OIL COLLECTING UNDER IMPERVIOUS ARCHES
OLDER ROCKS - BARREN
SEA LEVEL
200° LEVEL
400° LEVEL
600° LEVEL
PAUL W. PRUTZMAN - PETROLEUM CHEMIST - 1835 SIXTY THIRD STREET - BERKELEY - NO. 117

FIGURE NO. 7

REPORT OF PRODUCTION FOR FIRST NINE MONTHS OF PRESENT YEAR.

With the ending of the third quarter of the present year on September 30th, the greatest nine months of production in the history of California came to a close, the stupendous total shown by our statistics for these months surpassing the production for the entire year of 1909, which amounted to slightly over 56,000,000 barrels, whereas on September 30, 57,094,036 barrels of oil had been produced. The figures which follow speak for themselves and need no further comment:

Month	Production by Barrels
January	5,182,889
February	4,469,650
March	5,529,900
April	6,355,000
May	6,995,825
June	7,126,544
July	7,207,890
August	7,368,320
September	6,858,028
Total production first three quarters	57,094,036

FIELD OPERATIONS DURING SEPTEMBER, 1910.

Following are the field operations during September, as given out by the report of the Standard Oil Company:

Field.	Rigs Comp.	Wells Drg.	Wells Comp.	Wells Abd.
Kern River	7	57	15	2
McKittrick	4	18	3	..
Midway	17	252	25	..
Sunset	4	56	6	..
Coalinga	12	123	11	..
Watsonville	..	2	..	..
Lompoc	..	12	1	..
Santa Maria	2	38	..	..
Summerland	..	2	..	..
Santa Paula	6	33	5	..
Newhall	..	6	1	5
Salt Lake	2	18	2	..
Whittier-Coyote	3	18	..	..
Puente	..	1	1	..
Fullerton-Brea Canyon	4	46	2	..
Repetto	..	1	..	..
Totals	61	693	72	7

ADVANCE OCTOBER FIGURES SHOW HUGE DECLINE.

Advance production figures for the month of October show a considerable decline in all the West Side oilfields in Kern county, the report from Midway being particularly surprising, displaying a production of almost a half million barrels less for October than the preceding month. A decrease of 180,860 in Sunset and 55,810 barrels in McKittrick complete the onslaught on a high production. In all Kern county the Kern River field was the only field to increase its output, which it did by nearly 1,000 barrels per day, a monthly increase of 28,860 barrels being noted. In the advance table herewith given the only Valley field not accounted for, Coalinga, has not been heard from yet, and the table represents only approximately, it being too early for exactness:

FIELD.	New Rigs	Wells Drilling	Drilling Wells Sus.	Drilling Wells Aban.	Wells Completed	Wells Producing	Wells Shut In	Production
Kern River	26	44	7	1	19	1593	113	1,064,000
McKittrick	6	7	13	..	6	164	70	379,390
Midway	204	226	38	2	21	279	88	939,466
Sunset	27	84	27	..	5	134	125	521,560

This decline, which can be traced directly to the falling off of the production of the big gushers, is almost as phenomenal as was the suddenness with which the production jumped in the Midway after the Lakeview gusher and its contemporaries came in. The Lakeview is now down to less than 13,000 barrels per day, while still the greatest gusher in the state; other gushers have in the main ceased to gush and are now flowing wells with large productions. As we have always contended, it is the steady wells such as those in the Kern River field, or on the Mascot lease in the Midway, which roll up the grand total at the end of the month. It must, however, be said that there was a great stagnation in work during this last month and had there been a pressing necessity for a large production, the oil not only could but would have been produced.

PRODUCTION FOR SEPTEMBER, 1910, IN DETAIL.

Our figures show a small increase in the production for the month of September over the month of August of the current year, August showing a total production of 6,743,159 barrels of oil as against 6,858,028 barrels for September.

Following is our regular detailed monthly statement, giving field, wells producing, total production, stocks and consumption during September:

Field.	Total wells. producing.	Total production for month.
Kern River	1,556	1,200,450
McKittrick	174	425,715
Midway	248	1,539,584
Sunset	118	679,230
Coalinga	626	1,490,203
Watsonville	3	2,100
Arroyo Grande	2	900
Lompoc	20	70,200
Santa Maria	139	547,350
Summerland	141	5,350
Santa Paula	249	50,832
Newhall	71	14,901
Salt Lake	256	247,339
Los Angeles	416	36,550
Whittier-Coyote	140	104,480
Puente	54	3,300
Fullerton-Brea Canyon	236	439,544
Totals	4,449	6,858,028

	Barrels.
Stocks, August 31, 1910	28,264,169
Production, September, 1910	6,858,028
	35,122,197
Consumption, September, 1910	5,323,129
Stocks, September 30, 1910	29,799,068
Average daily consumption	177,438

UNION OIL COMPANY.

The Union has five new wells about to come in on the Sage lease, section 35, 12-24, Maricopa, all of which are due within the next two weeks or so, according to a news dispatch of recent date. All the wells are close to the sands, being from 1700 to 2020 feet down. At present the company is quite active in almost all of the fields in which it has holdings, although for a while past it let up work considerably on the Coast to take care of its holdings in the Midway, and especially to care for the production of the Lakeview.

The Union has decided to call a stockholders' meeting on December the 8th, in order to consider a $20,000,000 bond issue for twenty-five years, such as was outlined last month. (See October *Derrick*, page 13.) The meeting is to be held at Oleum, at 9 A. M., and two-thirds of the stock must assent to carry the measure, for which reason all stockholders are urged to be present either by proxy or personally, preferably personally. The circular was issued October 20th, and accompanied the 171st dividend, also announcing the increase of from 6 per cent to 7½ per cent annually in dividends, the total of which latter now amounts to $7,371,563.15. President Stewart, in the circular, urged the preference of a stock and bond issue over a treasury stock sale, showing what an advantage it would be to the stockholders not to sell the treasury stock. The president touched upon the oil war between the Standard Oil Company and the Shell Company, its next largest competitor in the refining field, and spoke of other matters of such interest that we herewith quote from the circular direct:

"The oil price war now being waged by the Standard Oil Company and the Shell Trading and Transportation Company (the next largest oil company in the world) for the markets of Europe and Asia should cause you no anxiety. That war is on refined products, while the bulk of California oil—approximately 80 per cent—is sold for steam fuel and gas purposes, and is practically all consumed on the Pacific Coast. There is no other fuel oil in the world near enough to California to disturb the market, as the consumers are now paying for their oil delivered to them. We have, therefore, no fears for the oil industry of this coast from this market, as the cost of transporting it here would amount to more than the consumers are now paying."

Under the head of general remarks it is estimated that the entire world's petroleum production in 1909 amounted to 304,000,000 barrels and that California's production in 1910 will exceed 25 per cent of this amount.

Mr. Stewart renews his recommendation of September 20th that permanent investors exchange their Union stock for Union Provident or United Petroleum, the former being equal in value to Union and the shares worth $4 more than either of the others, this estimate being based upon its assets. Since the last circular was issued attention has been called to the United Oil Company.

The names of the two companies are so similar that President Stewart expresses his fear that some persons may be misled, and he takes occasion to state that the Union Oil Company is not interested in the United Oil Company, and that his recommendation refers to the United Petroleum Company, explaining that he knows nothing whatsoever about the merits of the United Oil Company, while at the same time he is careful not to say anything which could possibly reflect upon the latter company, which is known to be reliable. In the next issue of the *Derrick* full particulars, or at least as full particulars as are obtainable, will be given out in regard to the action of the stockholders at the meeting on the eighth, if it is possible to get same before going to press.

STANDARD OIL COMPANY.

The Standard Oil Company is doing a lot of work upon its great refinery at Point Richmond, California, and this work, which consists in enlarging the plant, is at present giving employment to quite a number of men and in the future will assure steady employment to a great many more than have heretofore been upon the pay roll of the company, according to a reliable report.

A splendid write-up of the Standard Oil Company, its plans, its magnificent past and its wonderful growth, the utilizations of petroleum and what amounts almost to an eulogy of the company has appeared in the *Oil City Derrick*, together with a photograph of Mr. Rockefeller, the founder, and J. D. Archbold. The article was written by Frank Leroy Blanchard and appeared originally in the November number of the *Columbian Magazine*, and it is interesting from the start. It is a rather roseate article, and one which presents a side of the Standard not often held up to view, and it deserves serious consideration from those who believe in justice. Possibly a comparatively fair idea of this greatest oil corporation in the world *might* be gained by reading this, then reading Ida M. Tarbell's story, then reading this again, and comparing notes. Miss Tarbell wrote with bitterness at times and therefore it were best to read this later matter with care. However, we believe that we are safe in saying that nobody, who had not been years in the oil business, could gain a really good idea as to the Standard Oil Company.

The Standard's "oil war" with the British Shell concern is progressing merrily, although we have heard little of it of late. Probably the Standard will win, in spite of all handicaps and against all opposition which can be brought to bear. Certain London papers take the stand that the Standard is weak, that it showed its weakness by publishing a pamphlet outlining its campaign in a more or less general manner by saying that it should cut the price of oil in order to induce a larger general consumption and thus do away with the surplus. It may be that the London papers are correct; it *may* be, but we hardly think that they are; and we hope that they are not; the Standard is an American company and deserves America's support as against foreign corporations, whether or not there is dissension in the ranks at home.

The Standard's well on section 14, Midway, which came in early in September at 1,800 barrels per day, is holding up well and is said now to be producing about 1,000 barrels per diem. Its other wells in Midway are all in good condition as far as known, and its gassers are to be put to use making money for the company in the very early future, as is shown in another column. During the latter part of last month one of the company's wells on section 26 in the Buena Vista Hills struck a big gas pocket at 1,500 feet and sent a stream of mud and water high over the derrick, the result being that a "gusher story" was immediately hashed up and went the rounds of the press. The Standard's pipe line crosses through what may become a very valuable territory between the Buena Vista hills and the Elk Hills, where the Midway Basin Oil Company has made a strike. A feeling of general kindliness seems to prevail throughout the Midway district for the Standard people.

UNION AND INDEPENDENT AGENCY SEA SHIPMENTS.

During the month of September the Union Oil Company shipped from San Pedro, for domestic trade along the coast, 122,000 bbls. of crude; from Ventura it shipped 14,500 bbls. light gravity to its Oleum refinery on San Francisco bay; from Port San Luis its shipments amounted to 316,000 bbls. It also shipped for the Producers Transportation Company from Port San Luis 214,000 bbls.

A Review of the "Yard Decision"

Assistant Secretary of the Interior, Hon. Frank S. Pierce, having visited California for the sole purpose of investigating the effects of the Yard Decision in oil circles here, has returned to Washington to study out the best plan for an equitable settlement of the rights which have suffered through that decision.

We will venture to state that, with the exception of those persons who are directly affected by having title to their lands withheld or at least placed in jeopardy, a large number of persons who are interested in the oil business in California do **not** know exactly what the Yard Decision is, how it came about, its ultimate effects and its great scope. For this reason we will give an outline of the entire matter as it affects California oil men; while the outline may be brief as compared with the reams of paper which have been given over to the discussion of this topic, it will at least give the pith of the matter.

The Yard Decision was made during July, 1909, by the very man whom the Interior Department sent to California to investigate the injustice which it works here, Hon. Frank S. Pierce. The decision was made in a suit brought against H. H. Yard, Chief Engineer for the Rio Grande Western Railroad, in Utah, who had attempted to secure more than 200,000 acres of valuable timber lands by fraudulent placer locations. Mr. Pierce, in making the decision which deprived H. H. Yard of the lands he had fraudulently sought to acquire, ruled as follows:

"A placer location of 160 acres made by eight persons and subsequently transferred to a single individual, because not preceded by discovery, cannot be perfected by transferree upon a subsequent discovery."

The oil men of the State wish a law which will validate a location **before** discovery; at least, a certain class of them who are in the majority wish such a law. Upon the strength of the Yard Decision patent to certain parcels of land was denied and the oil men began to bestir themselves.

A great demonstration was immediately made. The oil men of the State were divided in their attitude as to the justice of the decision, conservation measures, etc., and factions sprang up, for and against, with various well known men at the head of two strong organizations, the California Oil Men's Association, and the Western Oil Producers' Association. The main idea of these two associations were identical, to-wit: better laws and juster administration of identical, to-wit: better laws and juster administration of same; but they differed radically upon the question as to what kind of laws would be better, and how such laws would best be administered. Finally, so great a remonstrance against the present conditions was made by all parties entangled in the matter that Mr. Pierce himself came to investigate. From our point of view it was one of the best things that has happened to the industry in recent times.

Mr. Pierce arrived in Los Angeles about the 15th of last month and started from his arrival to make the ablest and most thorough investigation of the whole location question as it affects the oil operator that could possibly be made. He began by holding conferences with oil operators and their attorneys for the purpose of determining the following points:

(1) Is or is not the Yard Decision too strict a construction of the law as applied to conditions existing in the oil fields of this State?

(2) If the decision should be modified in its construction, would it be possible to make it adequate to meet conditions? In other words, is not an entirely new law necessary?

(3) If a new law is necessary, what kind of law will be most generally satisfactory and just?

These questions apply only to lands already located and subject to patent under existing conditions, as President Taft has declared himself for a leasing policy to govern in the future, and Mr. Pierce did not care to discuss any administration policy.

In Los Angeles Mr. Pierce first held informal conferences with operators of every color of opinion in the matter, later holding an open "Court" in Symphony Hall, where some of the most prominent attorneys in the State were called upon to argue the Yard Decision. Among those who argued were Attorney Frank H. Short of Fresno, the able jurist who has so often been held before the public for his excellent logic; Chas. P. Fox, of the California Oil World; E. M. Sheridan, J. D. Lederman, Edmund Burke, who, however, was interested in contesting the right of the Southern Pacific's title to certain Coalinga lands; and many others.

Mr. Pierce was careful to say that while none of the Administration departments can enact laws, it is a common practice for all the departments to present amendments to statutes or even new bills which embody the ideas which the department or the administration is willing to support. Mr. Pierce concluded, in explaining why he was here getting the ideas of the various oil men for his department, with the following: "Such bills (as the department sees fit to present as outlined above) have been in the past much more apt to be passed through Congress than bills that are introduced without any department authority behind them. So that I will leave that question open to you, to make any suggestion that you desire."

Mr. Pierce is said to consider that those persons who were actually engaged in the search for oil at the time of the withdrawal of petroleum lands, on locations made prior to such withdrawals, will have no trouble in having their claims recognized, aside from any effect of the Yard Decision. This should greatly encourage those who felt that the titles to their lands were in jeopardy through conservation measures; but it is small consolation to those who located after September 27, 1909.

The strongest argument against the Yard Decision was that it was directly in conflict with decisions of the Supreme Court of the United States, affirming the decision of the Supreme Court of California which latter court Judge Frank H. Short, arguing against the Yard Decision, declared to be a most eminent authority in mining matters, for the reason that for years upon years it has been composed of men who have spent their lives in the study and interpretation of mining law.

Judge Short presented the Supreme Court decision in the Miller vs. Christman case in an able manner, showing that Miller had bought out his partner's right prior to discovery and himself and alone had effected a deal with the Home Oil Company, who drilled a well to make discovery, and that his right to enter into such an arrangement was upheld by the Supreme Court of the United States; contending that all petroleum locators have a right to abide by the decision of the highest tribunal of the land. He concluded:

"This decision (Miller vs. Chrisman) has blazed a trail through the forest of mining law and will be a precedent affecting many valuable mines. It should be so thoroughly analyzed as to never, in future, be subject to specious argument. The Yard Decision, if upheld, means confiscation."

Judge Short and Attorney J. D. Lederman appeared at the open Court held at Symphony Hall as intervenors in the case of the Land Department. Attorney Lederman, who made the opening argument in the case, brought out the following points which we use because they best display what the Yard Decision does, and what the oil men are contesting; showing the excellent grounds upon which the contest is based:

Point 1—The Supreme Court of the United States, the Court of the State of California and the Supreme Court of the State of Wyoming have definitely and conclusively decided that a conveyance by eight bona fide locators, of a claim comprising 160 acres prior to discovery by said locators and a discovery being thereafter made by the grantee, validates the location and vests the equitable title to said placer claim of 160 acres in said grantee.

Point 2—The proposition discussed under point 1 herein, concerning the conveyance of eight locators to a grantee prior to discovery was not the *ratio deciendi* of the Yard decision; was not squarely raised therein nor necessary to uphold the decision of the secretary therein; or *obiter dicta* and is therefore not the decision of the Secretary which precludes him from ruling otherwise in the case at bar.

Point 3—The facts in the case at bar involving an oil placer claim are entirely dissimilar from the facts involved in the Yard decision; which concerned alleged gold placer claims, and the inherent difficulties and expenses required to make a discovery on an oil placer claim, should invoke the equitable jurisdiction of the Honorable Secretary to distinguish the case at bar from the Yard decision.

Point 4—Even if this were a question *de novo* without the adjudications established by the Miller vs. Chrisman cases as outlined by point one, it is substituted that the mining statutes together with the care treating of the property rights of a locator on the public domain, must lead to a conclusion similar to that laid down by the Miller vs. Chrisman case.

Point 5—There is nothing in the statutes of the United States pertaining to placer claims that prohibits a corporation composed of at least eight citizens of the United States from acquiring a location from eight grantors, and thereafter perfecting the same by a single discovery within the limits of a claim containing an area of one hundred and sixty acres.

Point 6—Congress by its legislation has declared that a mining location prior to discovery is recognized by the statutes and protected as property. It follows therefore that being property it can be conveyed prior to discovery.

Point 7—The customs and regulations of miners in force for over fifteen years with reference to placer oil locations, permitting transfers of such claims before discovery, which rules and regulations and customs have been approved by the Supreme Court of California, Wyoming and the United States, and the universal practice of the land department in granting patents to grantees from such locations, has established a rule of property *which should* remain *stare decisis*.

G. S. Johnson of San Francisco made an appeal for the rights of the locator, reading the resolutions of the California Oil Men's Association to Mr. Pierce, and giving a specific case of great loss which will take place under the present construction of the laws as determined by the Yard decision.

Mr. J. Calvert Wilson of Los Angeles, President of the Chamber of Mines and Oil, declared that what the oil men wish is the certainty that their business will be protected.

R. W. Dallas filed a statement showing that more than 11,000 acres of land, on which there has been an expenditure of $2,480,000, is affected in Coalinga alone. Mr. Pierce asked Mr. Dallas if he did not think that the proviso in Sec. 2 of the Pickett Bill sufficiently protected the oil operators from having their land confiscated by the Government, but to this Mr. Dallas replied that he was not an attorney and so could not say. Mr. Pierce thereupon invited the viewpoint of Mr. Dallas' lawyers upon this matter.

Mr. J. C. Graham of Los Angeles made a speech filled with conservation and the advocacy of leasing public lands in the future, the lease to go to the highest bidder.

Mr. Thos. O'Donnell spoke with much feeling for the recognition of what he termed the bare rights of the thousands, both East and West, who have invested in oil operations without thought of the drastic action which the Land Office has taken.

Mr. Pierce's Probable Action in the Case in Question.

After leaving Los Angeles Judge Pierce went to Bakersfield, from which point he journeyed to every field of any consequence in the San Joaquin Valley. Every possible matter that could be of use to him in his decision was discussed with him by those who accompanied Mr. Pierce upon this trip. The Assistant Secretary took a great interest in the drilling of wells, watching one well in process of deepening for more than two hours. He was just as careful in noting everything else which came under his observation, as his speech made in Coalinga shows. This speech, which promises much and speaks most fairly, is well worth quoting to give an idea of the probable action which Mr. Pierce will take, and the undoubted fairness which will characterize such action. The substance of this speech was as follows:

The Secretary said that he appreciated very keenly the cordial welcome that had been given him at every point in California both as an individual and as a representative of the Government for the good of which we are all working; that for the past twenty-five years he had visited California every year or two, and that he greatly admired the State; that his feeling for Californians was very cordial; that the Interior Department and the President have been bombarded from California all summer and a long time previous with letters and telegrams protesting against the ruling of the Department as enunciated in the Yard decision; that for this reason he had been requested to come here and make a personal investigation into the matter which had created so much general dissatisfaction, listening to all legal arguments, etc.; that since his arrival he has heard every possible phase of the case argued by able attorneys and that through these arguments and his trip he had gained a vast amount of invaluable information to assist him in the final disposition of the matter; that after his return to Washington he would review all the facts presented, and that he would say, that after meeting the men in the fields as he had met them, face to face, he was convinced of their entire good faith and that he had full confidence that their operations for the most part had been conducted openly and fairly and in line with what they believed to be the law.

Continuing, Mr. Pierce further stated that he would see if it were not possible so to construe the present law that it would fully protect all of those operating in good faith on the lands in question; and that if he finally determined that if he could not possibly construe the present law otherwise than as set forth in the Yard decision, he would consider it his absolute duty and the duty of the Interior Department to recommend to the President of the United States and to Congress such remedial legislation as would give full protection. He concluded by saying that it would be the duty of Congress, if it desired to be fair with the oil operators of California, to pass such legislation without hesitation and that he personally was convinced that it would very readily be passed if it should be found necessary.

Such being the case, we cannot see that there should be further worry by the oil men in regard to justice from the Government. All must agree that the Assistant Secretary acted with the utmost fairness and with a mind open to every phase of the many sided question at issue. The fact that it was deemed necessary to send a man of Judge Pierce's calibre to the scene of the trouble argues that the Government is taking a deep interest in the matter, and that the President wishes to do everything possible towards the general satisfaction and general justice which it is in his power to do. The oil operators whose titles were endangered may well feel satisfied with the very fair attitude which has been displayed by the Government.

A meeting of the California Oil Men's Association was

called for the 12th inst., at which it was stated the subject to be discussed would be "that relating to land office rulings, and that alone," according to the official organ of the association, the *Oil World*. The meeting was to be held at Bakersfield and was called for the purpose of expediting justice on the part of the land office. Justice may be meted out much more quickly and in a manner not entirely to the taste of some of the protestants against present conditions, according to a dispatch from Washington; but as to this we will know more later.

TECHNICAL ARTICLE POINTS TO ADVANTAGES OF ELECTRICAL POWER FOR PUMPING.

That the entire country is awaking to the tremendous business advantages which continue to present themselves in the oil fields is beyond question. The awakening, however, is of such very recent date that we are in the midst of it now, and it is almost a difficult matter not to encounter technical oil articles of more or less value on opening almost any magazine treating of power, mining, or electricity. The Journal of Electricity, Power and Gas has been running some very interesting and practical articles recently, among the latest of same being entitled "Power for Pumping California Oil," printed in their issue of the 5th inst.

The matter is set forth in an attractive manner. The fact that at least one oil company has contracted with the San Joaquin Light & Power Company to have the latter supply it with 2500 kw. to be used exclusively for pumping oil is commented upon and made the basis of a very interesting article. The truth that steam and gas engines are on the way to be supplanted by the electric motor is the big fact played up by the story. We are pleased to quote from the article in question:

"A special adaptation of the three-phase induction motor has recently been devised so that it now meets the peculiar and exacting requirements of oil pumping. This, combined with the fact that electric power is now being distributed throughout many of the fields, particularly those within the radius of the San Joaquin Light & Power Company, is causing the rapid substitution of electric power for the older methods. The leading manufacturers of electric motors have conducted a long series of tests to adapt their machines to this use, and as a result of their successful issue are now taking contracts for installation.

"The motor employed is of the poly-phase induction type with form wound rotor, having three collector rings and external controller and resistance. Variable speed is obtained by varying the external resistance in the rotor circuit by a cylinder controller much like that used in street car service. One recent test showed that the stroke of the pump can thus be varied from 15 to 27 per minute as required, and also that the down stroke was much faster than the up, the speed varying from 210 to 470 r. p. m. when pumping 15.2 strokes per minute. The motors may be either back-geared or belted to a counter shaft and thence belted to the band-wheel.

"The actual horsepower required for pumping varies from 5 to 8, and for pulling out rods and tubing from 30 to 50, depending upon the depth of the well. The most practical installation is a motor that will take care of both pumping and cleaning, a requirement met by the Y-delta motor. With line voltage of 440 and motor connected in delta full line voltage is impressed on the coils of the motor. If the motor coils are Y-connected the voltage on each coil is 57.7 per cent of the line voltage or 254 volts. As the torque of a motor varies approximately as the square of the voltage a 440 volt delta connected 20 horsepower motor gives 6.67 horsepower., when Y-connected ($440^2:254^2=20:6.67$). The power factor and efficiency is practically the same when running at full load on the Y-connection as when running full load on the delta-connection, the control apparatus having the same effect in either case. The change from Y to delta connection is accomplished by the use of a triple pole, double throw switch usually mounted on the motor frame. The same method of speed control applies for both connections, the operating handle turning in two positions to allow for reversing the motor.

"The advantages of the electric motor as compared with both steam and gas are its low initial cost and its cheapness of operation. Its economy and its convenience make it the ideal power. The annual repairs for a motor is less than 5 per cent of its cost, while those on a steam engine are about 9 per cent and a gas engine about 15 per cent. There is no fuel nor water required and the labor charge is much reduced. Its one possible disadvantage is an interruption of service against which every precaution is being taken and for which ample compensation could be provided in the contract for electric service."

The Journal also runs an article on "The Oil Situation From a Gas Man's Viewpoint," but the article was written some time ago; it does not, therefore, have as much influence as it would have possessed before the recent alignment of the great marketers.

RECENT PATENTS.

The following recent patents of interest to the oil trade are reported expressly for the California Derrick by J. M. Nesbit, Patent Attorney, Park Building, Pittsburgh, Pennsylvania, from whom printed copies may be procured for 15 cents each:

Apparatus for forcing fluids from wells, W. C. Holliday, Columbus, Ohio, 971,612.

Coupling for pump rods, W. B. Scott, Los Angeles, Cal., 971,794.

Casing and tubing hook, P. J. Townsell, Parkersburg, W. Va., 972,416.

Well bucket bail, F. D. Walpole, McKenzie, Tenn., 972,663.

Under bit and reamer, J. C. Swan, Marietta, Ohio, 973,993.

Casing perforator, J. C. Swan, Marietta, Ohio, 973,994.

ELECTRIC CORPORATION LOSING NO TIME.

The Journal of Electricity, Power & Gas is responsible for the following report, dispatched from Bakersfield, Cal.:

Preparations are being made for the shipment of the material for the power line through the oil fields of the San Joaquin Light and Power Company to this city. The work of construction will begin from this end of the line within the next two weeks. The plan is to run a loop from the power plant near Fresno through the oil fields, by way of Bakersfield, returning through Coalinga. This vast undertaking will require some time to complete, but when the line has been built the oil companies will be assured of steady power under all conditions. The work of construction will begin simultaneously at Fresno and at Bakersfield, the Fresno crew working toward Coalinga on the loop, while the Bakersfield crew will build the line between this city and Moron. The two construction gangs will meet somewhere in the oil fields, completing the loop. The company will then have the use of four power plants for their own needs and for their customers. There is a 27,000 h. p. plant situated outside of Fresno, and another 2500 h. p. plant inside the city. At this city they have the old 2000 h. p. plant in the canyon which was used by the P. T. & L. Co., and the new 2500 h. p. plant in this city which has been completed recently.

CALIFORNIA DERRICK

The Oil Authority of the Pacific Coast.

Published Monthly
CHARLES C. WRIGHT, - - - Editor and Publisher

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THE OUTLOOK.

As a result of the Associated-Union-Independent deal for the marketing of California fuel oil, the oil business of the State has been placed upon a basis long-hoped for and sought by the producers in general and an era of great prosperity is at hand.

The business is upon a dependable basis. There will be no race for business at cut prices. All are working together to the one common end of making the most possible out of the production of oil. This is as it should be. For some time we have seen the futile efforts of the large companies to combat and subdue the producer. We have seen dishonesty and much rancor, but we now have a peaceful family of producers and marketers. The disturbing element has been subdued through force of circumstances and the ability and foresight of the managers of the Independent Agency. Credit must be given them in full.

Many oil men do not like the stand taken by the Government on the question of Government land, but this matter has but little bearing on the oil business and can not have much bearing for several years to come. While this may be a disturbing feature to certain interested people it is of little consequence to the public in general, and even the most rigid application of recent rulings would affect only a comparatively small number of people. Judging from recent assurances of high officials justice will be meted out to all concerned and no one can then justly complain.

In the broad scope of California's greatest and most profitable industry the production, sale and distribution of California's oil will develop into a business that will be making for the prosperity, convenience and happiness of mankind for scores of years to come, probably centuries, for no other fields approaching California's in magnitude are now known and there is small likelihood that any section of the world will be able to approach California in oil production for many, many years, if ever.

The positive assurance of a supply for this and future generations is positive guarantee of demand. The world is using oil for the fuel and the world wants more and still more. The underground oil storage has been measured. It is known that the supply will be permanent for a century or two. With a large above-ground storage and then a constant and steady stream of oil from producer to consumer the future of no business could present a brighter prospect. The price will take care of itself. This is a secondary consideration that will almost automatically adjust itself in the long run.

It is to be expected that such a vast and profitable industry will be a bone of contention for as large a portion of control as it is possible to secure. Every other industry of any importance has been a battlefield. Sugar production; the steel industry; the lumber industry; the agricultural resources; the transportation lines; in fact everything of any material importance is today a battlefield of contending elements and yet all are profitable; none, however, as profitable as producing oil in California.

PLEASANT ANNOUNCEMENT FOR TECHNICIANS.

The management of the *California Derrick* is pleased to announce that Professor Edmund O'Neill has written us a splendid paper which we shall run in our next number. As Professor O'Neill is too well known to require any comment from us, we will merely say that the article will undoubtedly be of great interest to oil producers in general, and producers and refiners of light oil in particular. Professor O'Neill, who is dean of chemistry at the University of California, also holding several other offices at that institution, and being probably the most widely known chemist in the West, is a most excellent writer, with the faculty of saying what he wishes to say both briefly and well, and in such a manner that it may be understood by the average man. The professor has been kind enough to write for this magazine before, and has promised us that his coming paper will not be the last, which will be most welcome news to our readers.

CONCERNING ADVERTISING.

We hope that every reader who picks up this magazine will not fail to read the advertisements through carefully. Our advertisements are all secured from well known firms and represent some of the most substantial and the most reliable supply houses in the United States. There is not a single advertisement in the *Derrick* which the *Derrick* does not stand back of with its reputation. Neither is there anyone subscribing to this magazine at present who can afford to pass by our "ads."

Such people as are behind the Youngstown Sheet and Tube Company, the Union Well Supply Company, the R. H. Herron Company, the California Hydraulic Engineering and Supply Company, the Alexander Pipe Company, and the Wm. Graver Company are implicitly to be relied upon, and we have found our relations with them most cordial and pleasing in every respect. While we have here mentioned only the supply houses, the same is true of every advertisement in the *Derrick* and we are pleased once again to say, "Read Our Ads."

PRESIDENT TAFT ORDERS INVESTIGATION INTO S. P. TITLE.

We are in receipt of the following very important dispatch from Washington, D. C., which we believe to be authentic:

"Attorney-General Wickersham, by direction of President Taft, has begun an inquiry to determine whether 6,000 acres of valuable oil lands in California were known to contain oil when patented by the Southern Pacific Railway Company. If such is the case, suit to recover will be instituted.

"The allegation has been made to the President that thousands of acres of public lands have been patented to individuals with the knowledge that they have contained oil, and that in many cases such lands have found their way into the hands of the large corporations. After several conferences with Secretary Ballinger and Attorney-General Wickersham the President decided upon the move already told of, and it is said that his intention is to have a thorough investigation into title of all the land-grant holdings of the Southern Pacific Company. The agents of the Department of Justice have already begun a search of the records of the General Land Office, preliminary to a complete investigation of the patents of any lands which it may be thought were taken from the public domain with the private information that they contained oil or minerals. The Southern Pacific's lands now in question were patented several years ago. They are those about which a fierce controversy has been raging in California.

"President Taft's instructions to Attorney-General Wickersham before leaving for Panama were to conduct an investigation with all the facilities which the Government affords

and if the results warrant such a course, to begin proceedings for restoration to the public domain of all lands so patented."

Evidently the cause advocated first by the *California Derrick* and later pressed by almost every other oil journal in the state, is to be taken up and pressed with a rigor which will make some officials of the great corporation not quite so sanguine as they have been wont to express themselves in regard to the ownership of the lands which they have held possession of in defiance of all equity for some time past.

UTILIZATION OF A WONDERFUL NATURAL GAS SUPPLY.

After viewing the great gas wells of the Standard Oil Company in the Midway, and after thoroughly investigating the district thereabouts, B. C. Oliphant, the very well known gas man of Buffalo, N. Y., has formed the California Natural Gas Company with a number of associates and will pipe the remarkable production from the West Side fields into Taft, Maricopa, and eventually into Bakersfield, where it will be utilized for every possible purpose. The California Natural Gas Company was recently formed in San Francisco, with the one purpose in view of developing the gas fields. Mr. Oliphant, the president, says that actual work will start upon the company's plant in December, the company already having materials in the Midway for laying thirty miles of 4-inch pipe. It is said that the central plant will be established on section 26, where the Standard's great "gasser" is located. This will produce as high as 30,000,000 cubic feet of gas per day.

Other utilization of the wonderful gas resources of the Midway has already been made by the United Oil Company, which finished laying five miles of pipe line during the latter part of October, from its well on section 20, 31-23, to its property on section 24, 31-22, and section 6, 32-23, and also to the town of Fellows, which will be supplied with fuel. Natural gas is brought into Taft through a two-inch steel main under a pressure of 300 lbs., the pipe having a capacity of 250,000 cubic feet per hour.

When the *California Derrick* advocated the utilization of the gas which was going to waste by millions of cubic yards per day, early in last March, not one paper in the state ventured to take the matter up, or gave this magazine any support; yet in spite of that fact gas has come steadily more and more into prominence, the damage done by the Standard's phenomenal gasser, when it took fire some months ago, calling attention to the appalling waste which was going on. Fortunately, Standard Oil officials do not wait for the papers of a state to advocate their interesting themselves in a product which is valuable, and which is going to waste, and so the matter was given attention, with the result that Mr. Oliphant came to California to see the gassers and to study the country, and now a great new industry seems assured.

Not only is one new industry assured; the effects of cheap fuel such as natural gas, upon a city of the size of Bakersfield, can hardly be exaggerated. It necessarily places Bakersfield upon a most enviable basis, as a manufacturing site, as cheap fuel is bound to attract the manufacturer. Hence, if the gas deposit continues to show up as it has for some time, Bakersfield is destined to a large immediate growth and general benefit from this new wealth which the barren-appearing oil fields have stored beneath them, and which go to swell the really marvelous resources of which Kern county is possessed.

CUTTING OUT A DEPARTMENT—TEMPORARILY.

Our reports of land exchanges were too few to justify running a column in this issue; for this reason what few notes we have been able to obtain in regard to oil land transfers will be found wherever they best "fit in."

A SLAP AT THE CALIFORNIA OIL INDUSTRY—A LITTLE WALL STREET PAPER WANTS MONEY KEPT IN WALL STREET.

In a recent issue of a weekly New York periodical, which is of so little consequence that it cannot be found on any of the news stands in San Francisco, but which enjoys the pretentious title of "The Financial World," articles have appeared denouncing the California oil industry for the sole purpose, it would seem, of excusing an attack upon the well known Spellacy properties, their managers and fiscal agents.

The little "Financial World" slaps the oil industry as a whole. It says: "Admiral Evans, who is an honest old salt, evidently has been hypnotized into believing that there are great fortunes to be made in oil in California." "Hypnotized" into believing in the California Oil Industry! Admiral Evans has never been hypnotized in time of peace or time of war, by anything or anybody. If he were favorably impressed with the Spellacy properties, and with the oil industry as a whole, it is to be attributed to the same discernment by which he, years ago, advocated the building of steel war craft for the United States Navy. We know that Admiral Evans would resent the statement that he had been hypnotized, had he seen it, for the value of the Spellacy properties is well known.

Every well posted oil operator in California is aware of the value of the Mascot and Premier properties, both of which are exceptionally prosperous — the Mascot property having brought offers before its recent sale to Admiral Evans' company of as much as $2,500,000, and the Premier is well worth over $1,600,000.

As almost all California oil operators are aware, the Mascot sells its oil—90,000 barrels per month, to the Standard Oil Company for 50 cents per barrel, rain or shine, providing an assured monthly income of $45,000. The Yellowstone, a controlling interest in which was purchased outright to begin with, by the Evans Company, already provides more than $4000 per month net, with a development of only ten acres out of its 225 acres, while the Premier, with only a small portion of its territory drilled, produces between 50,000 and 60,000 barrels of oil per month. The Premier has been or will shortly be absorbed by the Evans Company, and its owners and managers have co-operated actively with Admiral Evans and his associates in the formation of the new company—the California Consolidated Oil Company, which comprises the ultimate coalition of the three producers named. The Mascot is, according to the *Oil City Derrick*, which is an eastern paper, and so should satisfy our eastern critics, the second largest producer in the Midway field—the greatest oil field in the world.

The attack of the "Financial World" is disingenuous, indiscriminate and is not based upon facts. Reading it, one might think that some of the leading pioneers of the California oil industry have loaned themselves and their great properties to a wild-cat scheme and had dragged Admiral Evans in merely to use his name. The inference is wholly untruthful.

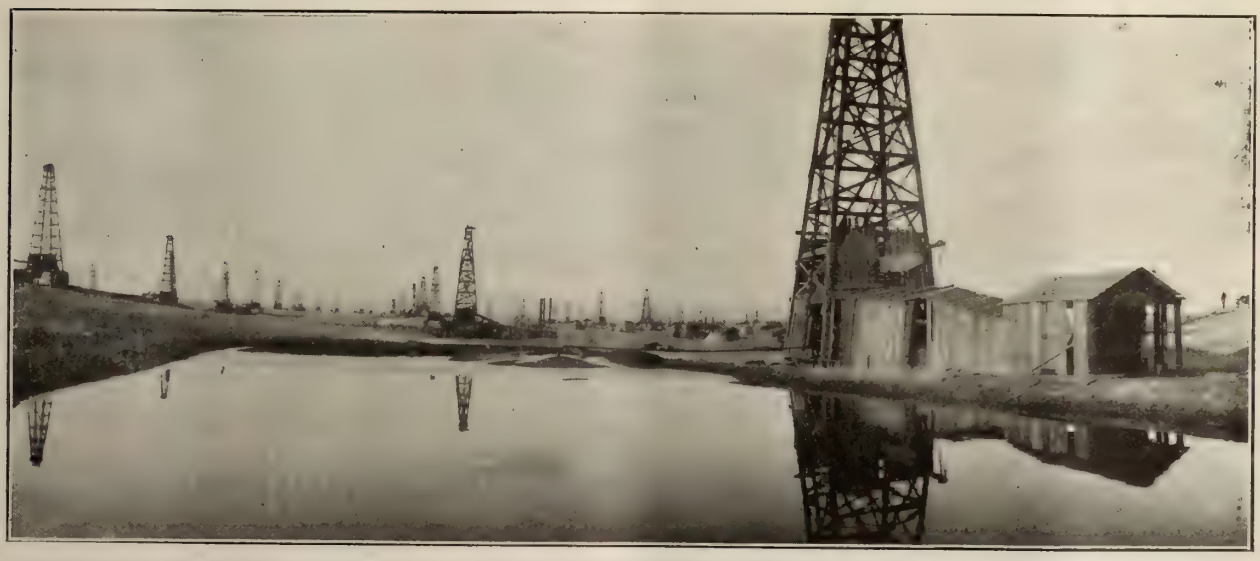
In the little New York paper the fact is studiously ignored that associated with Admiral Evans are a number of men well known throughout the country for their integrity, business ability and financial responsibility. These men are acquainted with the details of the consolidation, and even the co-called "Financial World" would hardly dare to intimate that they would loan themselves, their names, or be in any way connected with an undertaking that is not strictly honorable and of great merit.

Admiral Evans' associates in the California Consolidated Oil Company are: Theodore P. Gilman, former controller of New York; John W. Mitchell of Los Angeles, attorney for the Lankershim estate, valued at many millions; Meredith P. Snyder, three times mayor of Los Angeles, the second city in California, and at present a member of the executive com-

mittee of the Affiliated Banks of Los Angeles Clearing House; Frank N. Fish of the Western Metropolis National Bank, San Francisco; Robert Lee Dunn, managing director of the Lincoln Memorial Endowment Association of New York.

All these men, together with Col. Timothy Spellacy, California oil pioneer and oil magnate, and recently Democratic candidate for Lieutenant Governor; J. D. Thompson, vice-president of the Mascot and Premier properties; J. W. Cruikshank, who is Admiral Evans' private secretary, and N. F. Wilson, well known oil operator, and fiscal agent for the big Spellacy concerns, accompanied Admiral Evans on his tour of the oil fields, and of the properties embraced in the consolidation.

After the journey through the oil fields, these men, together with two widely known corporation attorneys, met in a joint conference which lasted for several days and nights at the Palace Hotel. As a result of this conference the California Consolidated Oil Company was formed. Admiral Evans' associates in his new company, together with the vendors, are acquainted with every detail of the consolidation.



(Photo by C. C. Wright)

A view, overlooking a part of the Premier Oil Co.'s property on Derrick Row, Coalinga. This property is included in the Evans merger forming the California Consolidated Oil Company from Yellowstone, Mascot and Premier. The Premier is one of the best and most reliable properties in the Coalinga field.

It is unspeakable that any periodical should assert that the well known men with whom Admiral Evans is associated would connive to defraud the public or tacitly admit their names to a stock offering that was not absolutely fair and above board. It is equally impossible to suggest that eight or ten of the best known men in California or their corporation attorneys were hypnotized.

The writer of the editorials was either lamentably deficient in his knowledge concerning the California Consolidated Oil Company and the California oil industry as well, or he was deliberately disingenuous in not making a fair mention of the Admiral's associates in the enterprise and explaining how they, too, had been hypnotized.

The oil industry in California is forging to the front, as the world demands cheaper fuel, and the value of the properties of which Admiral Evans is the head will increase as their production increases. Although Admiral Evans' entrance into the oil industry has been the source of congratulation to many oil men, because he is in position to call the attention of the world's navies to the advantages to be gained through the use of oil fuel, and because, too, it is an industry for good men, yet the oil industry can stand on its own merits as a commercial proposition, as also can the properties which Admiral Evans heads.

We have been unable to secure a copy of the "Financial World" from any of the well-known financial houses of this city. After considerable labor to get in touch with anyone who had ever heard of the paper, we came across a letter which gives the exalted standing of "The Financial World." We herewith give the letter:

"New York, 9-7-10.

"Dear Sir: We enclose you herewith bill for your subscription which is over a year past due.

"We have continued sending you the paper after the expiration of your subscription, because every bill that has been sent you has borne the notation to the effect that unless we were advised that you wished the subscription discontinued, we would assume that it was your intention to renew, and that you would remit later.

"We have billed you every month, and now, in accordance with the postal regulations, we shall be constrained to cut your name from our list unless we have your immediate remittance for renewal.

"In order to get you to renew, we make you the following liberal offer:

"For $6 we will renew your subscription for three years, and send you John Moody's 'Art of Wall Street Investing,' and 'Confidence or National Suicide,' by A. E. Stillwell. This latter is the much talked of book of the hour, and is written by one who is familiar with every phase of the subject about which he writes. He practically single-handed has built one of the greatest transcontinental roads in the world. This book cannot be secured for less than $1. We, however, are offering it to you, together with 'The Art of Wall Street Investing,' and a three years' subscription to the Financial World from date of expiration, for $6.00, or just one-half of the regular three-year price for the Financial World alone. For $3.00 we will renew your subscription for one year, and send you both these books.

"We feel confident that since we have been sending you the paper in good faith, and you have accepted it, and have benefited by it, you will accept either of these liberal offers.

"Therefore we look for your immediate remittance.

"Very truly yours,

"W. S. B.—J. THE FINANCIAL WORLD."

It might be mentioned in passing that the subscription price to the "Financial World," as printed in that valuable publication, is $4.00 a year or $12.00 for three years, so that, quoting from the letter itself, an offer is made of "a three years' subscription to the Financial World from date of expiration for $6.00, or just one-half of the regular three year price of the Financial World alone, and the 'Art of Wall Street Investing,' price $1.00, is included."

It is very amusing that a publication which finds it necessary to offer premiums and cut prices for subscription renewals to people who have found it of so little value that they have discontinued taking it, should attack an enterprise of this character because it is advertised. As well might it attack *Scribners'* for advertising Theodore Roosevelt's book. This is advertised practically the world over and book, "African Game Trails." This is advertised practically the world over and Roosevelt is quoted as the author because it is known that his name guarantees its authenticity and reliability, and Admiral Evans is advertised as president of the California Consolidated Oil Company because it is recognized that he would not connect himself with any enterprise that is not absolutely trustworthy and reliable.

It might almost be imagined that either Admiral Evans or someone associated with him in his enterprise had discontinued subscription to the valuable publication, "The Financial World," and did not care to renew even at the bargain price with the premium thrown in.

HORRIBLE EXPOSURE OF DARK, DYED-IN-WOOL VILLAINY OF SOUTHERN PACIFIC! HARK! HEAR!

One of our contemporaries has come out with a story of a terrible "steal" which the S. P. Railroad was just about to perpetrate when it was discovered by the defender of the People. The sinister plot of the tale runs as follows: The Southern Pacific built a railroad line, now owned by the Santa Fe, from Mojave to Needles, California, through the San Bernardino County desert, and by so doing obtained the right to every other section of a large tract of land extending east from a point near Barstow. The railroad company, it is said, did not patent the land because it would have to pay taxes upon same. But about a year ago they determined to perfect their title to the properties, and advertised them in the usual legal form. Somebody, however, discovered the fact that the S. P. was after its own land, and started trouble, objecting strenuously to the company's right to the property after shirking payment on the taxes. As a large part of the land is thought to be oil bearing, Brer Fox and the other editors have set out to protest against the company's rights. But, as far as can be told, it will do nobody any good if the S. P. doesn't get the property, as in all probability the President will withdraw the lands from entry, and any chance for the "poor prospector" will be lost. Whether or not patent to the land will be denied because of the company's slowness, cannot be told; but it does not seem right that they should entirely lose their equity after complying with the terms to the extent they did.

WHY HE WENT TO EUROPE

W. F. Herrin, having returned from Europe without announcing the sale of $50,000,000 worth of oil lands, it is now said that he went to see his daughters, but—he just escaped the recent election, was it a coincidence.

AN ERROR CORRECTED.

It is by no means the easiest matter in the world to edit a magazine correctly, especially if the magazine treats of technical subjects, or if there are figures involved. Matter will slip between the pages which is not intended; sometimes the mistake is seen, but once from the press it can rarely be changed, as it is a matter of great expense to run off a whole "form" all because of some small typographical error. Thus we feel that we will be granted immunity from harsh criticism even though we did allow the last number of the "Derrick" to say that the Union Oil Company was capitalized for $25,130,000. What was meant was, of course, that out of $50,000,000 capitalization, shares to the value of $25,130,000 had been issued. But before the error which allowed the mis-statement to go through had been discovered, the *Derrick* was off the press, and we simply couldn't hold it.

MORE ELECTRICITY.

A report that another oil company has "fallen" to the inducements of the electric pumping system has reached here. The Wellman Oil Company at Maricopa is preparing to install electric motors for pumping purposes. The success of the experiment in the Coalinga field has awakened the interest of oil men generally and the Wellman is the first concern to install the device in Maricopa.

It is reported from the West Side that plans are under way by the Kern Trading and Oil Company, the oil department of the Southern Pacific, for a great deal of new development work. It is stated that employes are being engaged for the running of thirty strings of tools, which are to be put in operation on as many undeveloped holdings in the Midway-Maricopa field.

. . Oil Maps . .

Just Out

The Barlow and Hill book of maps of Coalinga, Kern River, Sunset, Midway and McKittrick fields, with list of companies. Also maps of entire State.

On Sale Now

Price $1.00

CALIFORNIA DERRICK

6th Floor, Pacific Bldg. San Francisco

Authentic Information About Foreign Oil Fields.

THE MAIKOP OIL FIELD IN RUSSIA.

(From Ambassador W. W. Rockhill, St. Petersburg, prepared by Francis Schlerath of the Embassy.)

The Maikop field is situated in the Kuban Province, in Southern Russia, on the western fringe of the Caucasian Mountains. As at present known, it has a total length, from east to west, of approximately 25 miles, while its greatest width, from north to south, is about 20 miles.

The field, though recognized for several years past as highly petroliferous, only came into prominence during the latter part of 1909, owing to a most prolific oil fountain being struck, and the sinking of a 240-foot well which is stated to have thrown upward of 30,000 tons of petroleum in six days and after defying all attempts at control for weeks continued to discharge oil in very large quantities. This marked the commencement of the commercial history of petroleum in the district, for although the region has been known for centuries to be oil bearing, no serious attempt had previously been made to test the territory by means of boring.

It is the most favored petroleum-producing region in Europe, being only about 50 miles from Tuapse, on the Black sea, with which export point it will in time be connected by both railway and pipe line. The territory embraces the five Cossock villages of Khadjinskaya, Shervanskaya, Apsheronskaya, Nephtanaya, and Kabardinskaya.

At many points, particularly on the hillsides, large outcrops of impregnated oil sands have been noticed, and in other places exudations of petroleum are very frequently encountered. To the east of Khadijinskaya is an asphalt mountain, from almost every spot of which oil oozes, which, after losing its volatile constituents, leaves a tarry residue spread over the surface. To the southwest of Nephtanaya, indications of the petroleum deposits have been evident from time immemorial. It was here the Black Sea Company's spouters were struck. It is expected that a remarkable future awaits the systematic development of the field, for not only are the most prolific oil sands encountered at shallow depths, but exploitation generally can be conducted at considerably less cost than in the Baku region.

When pipe lines from the oil fields to the port of Tuapse (50 miles) have been completed, the oil will be carried at a far less cost than that which is incurred in transporting oil from Baku to Batum (600 miles). The Russian Government is actively pushing forward the construction of a railway line which will pass through the Maikop oil field and will connect with the port of Tuapse. This line will run about 148 miles from Armavir, in the northern Caucasus, westward to Tuapse, to serve as an outlet for the trade. The section from Armavir to Khadijinskaya in the northwestern end of the oil field is expected to be ready by January next. This company was floated in London in 1909, as a joint stock railway loan, and the bonds are under 4½ per cent government guaranty.

In a few months, when the proposed roads are completed, which will connect the various districts with the national post-road from Maikop to Tuapse, the various plots will lend themselves to comparatively economical development, while the cost of drilling the wells will be cheap as compared with that in the Baku district.

Character of the Output.

The petroliferous belt running through the Maikop field has been located, but so far the production of the field is limited to a few spouters. Analyses of samples from a bore hole 70 feet deep and from the spouters of the Black Sea Company, though a considerable distance apart, prove that the crude oils are identical and that the oil obtained from the Maikop field is rich in illuminating oils and motor spirits.

Securing Prospecting License Claimants.

The area covered by each prospecting license includes about 100 acres on which the purchaser is entitled to two years for examination, with the right of obtaining a definite allotment of about 27 acres of the land covered by the license, with the right to hold the plot for a period of twenty-four years, at the usual royalty payable to the government of 1 kopeck (a little over ½ a cent) per pood on the first 2,000,000 poods (1 pood equals 36.112 pounds), and of ½ kopeck per pood on any excess quantity.

Every request for registration of a company, whether Russian or foreign, must in the first instance be sent up to the Minister of Commerce with the intended articles of association. The Minister of Commerce sends copies of all the documents relating to the proposed new company to other ministers who may be concerned, and if within a month no report has been made and presented by the different ministers consulted, it is taken for granted that they have no objection to make, and the Minister of Commerce deals with the matter as he thinks fit.

Over 12,000,000 pounds sterling ($58,390,000) of British capital has already been invested in Maikop claims.

OPERATIONS IN JAPAN.

(From Consul-General Thomas Sammons, Yokohama.)

The increase in the number of active oil wells in Northern Japan is creating further demands for required machinery, and the successful exploitation of oil fields in Russian Saghalin is attracting much attention throughout the Japanese Empire, where several millions of dollars have already been expended in the effort to locate extensive deposits of this nature. In case the Saghalin oil fields continue to be inviting to those engaged in enterprises of this kind, a further demand for oil industry machinery will result.

While the production of crude oil in Japan has not as yet been successful in Hokkaido or Southern Saghalin, the number of active wells in the northern part of the main island is increasing, the increase for 1909 over 1908 being 245 wells, the total for the former year being shown in the following table, which also gives the production of crude oil for the two years:

			Production.	
County.	Bore Holes.	Wells.	1908. Gallons.	1909. Gallons.
Kambara	573	220	39,510,688	39,339,391
Koshi	478	196	15,842,946	12,667,639
Kariha	311	...	26,676,857	26,888,159
Kubiki	224	33	2,890,518	2,499,942
Santo	40	25	803,479	1,094,103
Uonuma	28	...	246,808	182,904
Totals	1,654	474	86,071,299	86,672,141

The finished products from the foregoing wells during the two years were as follows:

Product.	1908. Gallons.	1909. Gallons.
Naphtha	2,042,993	760,721
Refined oil	26,148,611	27,062,473
Neutral oil	7,205,334	7,820,770
Fuel oil	23,364,028	21,311,694
Lubricating oil	5,040,664	4,375,404

OIL REPORT FROM NORTH BORNEO.

(From Vice-Consul John N. Wardrop, Sandakan.)

Actual oil development work has not yet been undertaken in North Borneo. A small syndicate had geologists and surveyors out here during 1908 and 1909, the result of their investigations being the formation of the present British-Borneo and Burma Petroleum Syndicate (Limited), which is said to have secured oil rights over a fairly large tract of land from the British North Borneo Government. No oil derrick or rig has yet been erected, though the syndicate is now taking some initial steps toward development in the neighborhood of Mansut, Brunei Bay, near Labuan.

Petroleum in Borneo is contained in regular occurrences of oil belts of narrow width, but of great length, and the oil indications in British North Borneo coincide with remarkable similarity

TEN—DERRICK.

with those existing on the east coast oil fields, which induced the successful Shell Company to make their first trial borings. In both parts of the island the same geological conditions prevail, the oil being found in the Tertiary formation of the Miocene period, which contains the rich oil-bearing strata of this country. The oil here is associated with enormous gas pressure, most of the wells starting as gushers, the oil being generally contained in sandstone. The petroleum-bearing lands of British North Borneo are those on which the most recent attention has been fixed, and they are, from geological and other indications, believed to bear an intimate relationship with and be closely allied to the deposits of Dutch Borneo.

PETROLEUM IN VENEZUELA.

Referring to the report in Daily Consular and Trade Reports for February 5, 1910, of a concession secured by the Venezuelan Development Company for the exploitation of petroleum, Consul Ralph J. Totten now writes from Maracaibo:

"The eastern part of the country and the delta of the Orinoco have been investigated and several tracts containing petroleum have been located. They are at present exploring the regions

around Lake Maracaibo. They have about ten geologists and mineralogists in the field under the direction of an expert mining engineer. As this territory is especially rich in oil and asphalt lands, it is expected that the center of the company's operations will be in this locality and that exploitation will be commenced almost at once."

CANADIAN GOVERNMENT MAKES IMPORTANT OIL RESERVATION CLAUSE—OTHER NEWS ITEMS FROM THE DOMINION.

Our Eastern correspondent says that the probability that oil will be the future fuel used for Canadian vessels is foreshadowed in the following clause, which will hereafter be inserted in all leases of crown lands for petoleum puposes: "That if, in the opinion of the minister, the said petroleum or its products or any portion thereof should at any time during this demise be required for the use of His Majesty's Canadian navy the minister should have a right of pre-emption of all crude petroleum oil or its products gotten or won under this demise, at a price to be fixed, in case of difference, by the exchequer court of Canada."

The town of Aylmer, Canada, has granted a franchise to the Peninsular Oil and Gas Company of Chatham, to furnish natural gas from the Vienna field at the following prices: Household consumers, 25 cents; manufacturers, 12 cents first five years, then 14 cents; school and public buildings, 15 cents; municipal buildings, free.

J. T. Hawke of Moncton, New Brunswick, has stated in an interview that within twelve miles of that city there is a gas well producing five million cubic feet per day. There are a couple more wells close by, one of which has a flow of four million feet a day, and the other two to three million. These wells are all capped and ready to deliver gas. "I saw some little time ago," said Mr. Hawke, "a statement by a Toronto professor that there was not a gallon of crude oil obtainable in New Brunswick. Some of us as a joke sent him five gallons of it from New Brunswick. I saw myself the other day near Moncton a tank containing sixty thousand gallons of crude oil obtained from a well in the neighborhood."

RECENT INCORPORATIONS.

Noyes Ranch Oil Company; organized under laws of Arizona; capital, 1,000,000 shares; in treasury, 500,000 shares, par value, $1. Will develop upon a 400-acre tract in Lompoc field of Santa Maria district, on 10 per cent royalty basis, lease running for twenty years. Officers and directors: President, Jos. A. Stultz; vice-president, A. W. Broughton; secretary and treasurer, Maurice Higgins; Howard A. Broughton, Frank B. Connolly, E. M. Herrar, W. T. Jones. The company's prospectus states that the company's property is only two miles from the Associated's pipe line to Gaviota, that the officers of the company are well known, giving their connections, and affirms that the United States Geological Survey has issued a favorable bulletin upon the chances for obtaining oil here. A. S. Cooper, former state mineralogist, has also made a very favorable report upon the land in question. The company has issued a map of the Noyes tract in the Santa Rita rancho, showing formations. The map was made by Mr. Cooper.

El Camino Oil & Development Company, San Francisco; incorporated October 26; capital, $600,000; directors, Earl S. Shaw, E. E. Ballagh, A. R. Wilkes of Maricopa; F. F. Cooke of San Francisco, J. H. Remers of Alameda, C. Miller, C. H. Eccleston of Oakland.

Great West Oil Company, Los Angeles; incorporated October 28; capital, $1,000,000; directors, W. Moore, F. D. McClure, E. H. H. Stanley, A. C. Durkee and M. E. Ward of Los Angeles.

Marietta Oil Company, Los Angeles; incorporated October 28; capital $200,000; directors, S. R. Shoup of Marietta, Ohio; J. W. Righter, C. G. Tibbens of Los Angeles.

Mineraline Oil & Refining Company, Los Angeles; incorporated October 26; capital, $50,000; directors, George W. Clark, H. J. Clark, P. R. Longley, H. G. Bennison and Chas. Strasser, all of Los Angeles.

Mount Vernon Oil Company, Los Angeles; incorporated October 27; capital, $750,000; directors, J. E. Levi, N. Rossiter of Los Angeles; E. C. Cowell of Santa Paula.

Oil Center Consolidated Oil Company, Oil Center, Cal.; incorporated October 27; capital, $30,000; directors, W. F. Byrne, F. A. Hooper, C. E. Ballagh and Philip Boch of Oil Center; W. G. Lehman of Bakersfield.

OIL TRADE EXPANDING.

The Canadian Pacific Railroad has contracted with the "Agency" for 2,500 barrels of oil per day at a price which will net the producers of same 50 cents per barrel, for the purpose of converting its locomotives, running out of its Pacific Coast terminus, up north, into oil burners, and for its Puget Sound and coast vessels. It is stated that the change was determined upon because of the great saving effected in their vessel, the Princess Marie, which they had converted into an oil burner for the purpose of giving the California fuel a try-out. The new Western Pacific boats, Yale and Harvard, which are due to arrive in San Francisco very soon now, are oil burners and will consume, between them, about 45,000 barrels of oil per month, which has been contracted for with the Agency. It is also said that the big steamers President and Governor, which will have to compete with the splendid W. P. steamers, will probably use oil. The Yale and Harvard, it might be added, will make a very fast trip from Los Angeles to San Francisco, the time to be consumed having been stated as from 5 p. m. to 10 a. m., from the San Francisco dock to the conclusion of the trip in Los Angeles. Rumor has it that a Japanese line between San Francisco and Oriental points will also consume oil only, but this report has not been verified. As was announced *exclusively* by the *California Derrick* in our last issue, the Hill Roads, west from St. Paul, Minn., have determined on the use of oil. The Great Northern has contracted for its supply with the Agency, as have the San Francisco Harbor Commissioners, which shows that Agency business is good.

MERCHANTS & BANKERS OIL COMPANY MAKES CHANGES.

S. P. Mulford has been elected vice-president and treasurer of the Merchants and Bankers Oil Company, operating on the north "front" in Kern River on section 20, 28-28, and Jack Tehen has been elected secretary, with charge of the field work also. Mr. Mulford succeeds Mr. A. W. Hale, of the Hale-McLeod Company. The Merchants and Bankers has proved up quite a little territory and has not only a production but a contract for same.

A NEW TOPPING PROCESS.

The report is traveling around that the Santa Fe, or men prominent in the oil department of that company, has secured the use of a topping process which, it is said, has yielded such wonderful results that the backers of the project have "entered into direct competition with the Standard for the light oils of the Maricopa-Midway district." We have not been able to learn anything of this marvelous process, but thinking there may possibly be a grain of truth in it, we submit it at its face value.

LOST HILLS PURCHASE.

It is reported that Mr. E. L. Doheney has, through J. M. Danziger, sunk $400,000 in Lost Hills, the lands purchased being patented. The lands obtained by Mr. Doheney are not given in full; those described follow: Section 36, 25-20; W. ½ of section 34, 26-21, and portions of 25-19. Development on some of the land has proceeded to a depth of 500 feet, passing through the "tar" sand.

MASCOT OIL COMPANY.

The California Oil World is responsible for a report that the Mascot Oil Company is to double its present dividend of $10,000 per month, paying 4 cents per share from now on, instead of 2 cents per share monthly. It is further stated that the distribution will take place on November 20th, according to their advices. Two new wells have been brought in recently and it is expected that when they are completed the company's production will approximate 100,000 barrels monthly, all of which goes to the Standard Oil Company at 50 cents per barrel, thus increasing the present earning of $45,000 to $50,000 per month.

VISALIA MIDWAY OIL COMPANY.

The Visalia Midway has finished well No. 2, which is producing several hundred barrels of oil daily, increasing steadily in its output. Water troubles have recently been experienced with well No. 1, but the well has now been plugged at the bottom and perforated, tapping the sand passing through. It is expected that this will prove effective in relieving all trouble.

MIDWAY FIVE OIL COMPANY.

The Midway Five Oil Company's well on section 5, 32-25, came in as a gusher, a very pleasant surprise. The company has contracted with the Standard Oil Company for 100,000 barrels at least, at a price given as "better than 30 cents and not as good as 50 cents per barrel." It is said that the company receives 40 cents, but this has not been confirmed. The price, whatever it is, is based upon the gravity of the oil and increases over the agreed minimum at the rate of 1 cent per every degree. The Midway Five has a thirty-acre lease from the Hale-McLeod Company on section 5, 32-23. The first well was rated at 1,000 barrels production per day, although it increased its output very rapidly, from the beginning. It is said that the well recently broke from control and produced 4,200 barrels of oil in six hours. It is also reported that the company will ship its oil directly to the consumer if it does not get a better price after having complied with the Standard's contract for 100,000 barrels. This determination is evidenced by the building of a spur track from the railroad and loading racks on the lease, so that rail shipments can be begun immediately, in case all their oil is not contracted for.

CANADIAN PACIFIC OIL COMPANY.

The Canadian Pacific (of B. C., Ltd.) is making good progress, says the *Midway Driller*. Well No. 1 is doing very nicely, although there were vexatious delays, due to drilling troubles. The company landed their stove-pipe casing at 1,006 feet, and the 12½-inch casing is now going down, the superintendent of the lease feeling that most of his troubles are behind him.

INCREASES ITS WATER PLANT.

The Stratton Water Company is enlarging its water supply on section 7, 32-23, Midway, by sinking two more wells. It is said that the plant will have a capacity of 250,000 barrels of water monthly when these wells are completed. Those who have not been in the almost waterless oilfields cannot appreciate the value of water wells in the Midway.

GREAT WATER PROJECT CONTEMPLATED.

The *News* of Maricopa is authority for the statement that a survey has been made by a corps of expert surveyors for a large water main running from the headwaters of the Cuyama, near Ozena, into the West Side oilfields, just back of Maricopa. A great distributing reservoir, located at an altitude of 5,000 feet, in the hills southwest of Maricopa, will distribute the water, which will be secured by tapping a number of springs in the Ozena section and diverting the flow into a large receiving reservoir, from whence it will run, by gravity, into the distributing reservoir. The water line will, it is said, be forty miles in length, will run the water all the way by gravity, and will be capable of handling 31,000,000 gallons daily.

Engineer T. H. Corey, the expert civil engineer who built the Southern Pacific's big diverting dam on the Colorado river, stopping the flow into the Salton sea, is said to be in charge of the project. The Pine Mountain Water Company is behind the proposition; it is a recent incorporation, with big capital behind it, according to reports. The value to the West Side of the amount of pure mountain water which it is declared possible to obtain can hardly be overestimated. If the proposition goes through it will give a wonderful stimulus to the region.

MIDWAY-COALINGA-CONSOLIDATED OILFIELDS COMPANY APPEARS.

It has been announced that M. J. Lamance, who has had such excellent success in his Midway projects, has succeeded in financing a large company to take over all his and his associates' holdings in the oil fields of the San Joaquin valley, the name of which is the "Midway Coalinga Consolidated Oil Fields Company," with a capital of $10,000,000. There are 2,000,000 shares; par value, $5 each. The company has made application to list its shares on the San Francisco Stock Exchange. Its officers are: President, M. J. Lamance; vice-president, J. F. Carlston; secretary, D. S. Ewing; treasurer, J. L. Eccleston. With the exception of Secretary Ewing, who is an attorney residing in Fresno, all the officers are Oakland people. The properties included in the consolidation are:

Maricopa, S. E. ¼ of section 36; N. W. ¼ section 36, 12-24. Midway, section 2, 32-23. McKittrick, N. ½ of S. E. ¼ and S. W. ¼ of N. E. ¼ of section 20, 30-22. Coalinga, S. W. ¼ of section 24, 19-15. One of the well known properties which

enters into the new company is the Ethel D. property, which has produced largely and is an excellent piece of land; it brought in one of the very first of the big wells in the Maricopa-Midway region, a photograph of their gusher having been run on the cover of the March number of the *California Derrick*. The capitalization of the new company seems large but it may be the intention of its backers to acquire greatly.

MARICOPA THIRTY-SIX GETS GUSHER.

The Maricopa Thirty-Six Company's well No. 2, which is situated very close to the Lakeview gusher and for that reason has been delayed for some time because of the danger of firing the gas which the world's greatest gusher has continued to discharge, has finally brought in a well the initial flow of which approximated 3,500 barrels per day. The well was brought in at 1985 feet, only 300 feet from the Lakeview, and is approximately 300 feet shallower, producing a comparatively light gravity oil, showing that it is not in the same stratum as its famous neighbor. The Lakeview, it may be said, is still producing in excess of 12,000 barrels per diem. Well No. 1 of the Maricopa Thirty-Six is still holding up well; it is producing about 300 barrels daily.

AMERICAN OILFIELDS BIG WELL HOLDING OUT.

The spectacular gusher of this company, well No. 79, on section 36, 31-22, Midway, is still producing 4,000 barrels of oil per day. This well was from its bringing in one of the great spectacles of the Midway, considered the next greatest well to the Lakeview. The company, which was formed last January by Mr. E. L. Doheney and associates, has just paid its first dividend, amounting to $179,093. It is a $25,000,000 corporation, and successful far beyond the average concern of whatever capitalization, sharing in a marked degree the success which has followed every Doheney undertaking. Recently two more new wells were brought in—No. 60, 2100 feet deep, and No. 86 at 900 feet. The company's two 500,000 barrel concrete reservoirs are well on the road to completion.

BRONCHO OIL COMPANY'S WELL.

The Broncho has brought in well No. 1 at a depth of 2265 feet, after a year and a half's work. The well, which is located on section 8, on the Maricopa Flat, and which has been very difficult to complete, is considered a pumping proposition and will probably be good for about 150 barrels per day. The oil, which constantly bubbles over the top, has not enough force behind it to make it the big well which it was at first reported to be. At the same time, it may take a spurt and flow "big," unexpectedly, like many other wells in this field have done.

CONSOLIDATED MIDWAY SUBSIDES.

The Consolidated Midway's well to the east of the Lakeview, which came in a huge gusher, has now subsided to a very considerable extent, and is no longer the subject for special write-ups with photo decorations. The subsidence of this well, the wells of the American Oilfields, the gradual lessening of the force which shoots the oil through the well-worn pipe of the Lakeview gusher, and its consequent smaller delivery are what has suddenly pulled the Midway down from the first place on the list of oilfields of the state. There are, of course, a huge number of wells which can at any time be made to produce in large quantities, should business demand the oil, but it has been principally the gushers of Midway which caused the sudden overproduction; until they began to tumble in one after the other, some six to eight months ago, the supply and demand was constant.

MADISON OIL COMPANY.

Well No. 1 on the Kern River lease of the Madison has again been put on the pump and is doing nicely. The company had considerable oil in storage and pumping was discontinued on account of the lack of proper storage facilities. It is expected that a shipment will be made in the course of a very few days and that from the first shipment in the future others will be continued as rapidly as facilities will permit.

CALIFORNIA MIDWAY OIL COMPANY.

The company has struck the big sand in well No. 2, to such an extent that the superintendent of the lease determined at last reports not to drill further than fifty feet into it, on account of the heavy gas escapement. A heavy gate has been attached to the well and after it has been allowed to clean itself out in case the flow becomes too big for safety it can be controlled. The boiler has been moved from the fire radius and a pipe line has been laid to the receiving tanks at well No. 1, which is connected with the Standard Oil Company's pipe line. The company is considered exceedingly fortunate to have penetrated even to a depth of fifty feet into the sand, as no other well has been able to do so, the tools being hurled from the hole.

LADY WASHINGTON OIL COMPANY.

Well No. 1 will be finished with a string of 5⅝-inch casing. Twenty-five hundred feet of this sized casing was ordered some days back and is expected to be on the ground in a week or so from present time. It is announced by the management that the well will be pushed rapidly to completion and in the meantime preparations are being made to resume work upon No. 2. Cheerful news has been disseminated on the flat recently because of the report that a strike of 60 deg. gravity oil was made on the Western Mineral Company's property, only a little distance below the Lady Washington's lease. While Sunset has the greatest gusher the world ever saw, it seems also to be blessed with a multa-variety of oils of every character. While we have been unable to confirm the report in regard to the gravity of the oil well just mentioned, our correspondent states that in his opinion there is no question but that the oil is very much lighter in gravity than anything yet obtained in the Sunset field.

HONOLULU BRINGS IN A BIG GAS WELL.

Ushering itself in with a tremendous roar, the Honolulu's latest well on section 6, 32-24, in the Buena Vista Hills, turned out a gas well of almost unprecedented hugeness, being absolutely beyond control. The terriffic pressure burst and tore the casing off but a short distance beneath the surface. Every effort is now being made to get the well under control, which will be done in the main much as the Standard has been endeavoring to control its great well, that is, by filling a pit around the well with cement and with that solid foundation proceeding to cap it. The superintendent, Mr. Pollard, who was stabbed by a drunken chauffeur some time ago, and who organized a force of men to repel invasions on the part of land jumpers, a Texas man who has made good in California in every sense of the word, plans to use the gas for fuel for the company. Mr. Pollard, it has been announced, will take charge of another company's operations; the Humahuma Oil Company is the name of the new concern, and it is a Honolulu, Hawaii, corporation, financed by Honolulu capital exclusively. This new company is operating on the Carissa plains, which are now generally thought to have a splendid chance to become a great light oil field; at least they are thought to have such a chance by the new Hawaiian company, and a good chance by the Associated, which is drilling on section 30.

GENERAL NOTES ABOUT MIDWAY COMPANIES.

One of the North American Consolidated Oil Company's wells on section 22, a mile and a half west of Taft, struck a heavy gas pocket recently and what happened happened with great suddenness. The derrick was demolished, the tools were shot straight over the derrick for a distance of fifty feet from 670 feet below the ground, and when they finally landed they buried themselves half way upright in the ground. Work delayed.

The newly formed Esperanza Consolidated, which took over the Scrongo property, has started work on three new wells, having "planted" that number of derricks. The company will deepen well No. 1 to change it from being a water to an oil producer. The company is rushing work all around.

The Olig Crude, which lost three wells through casing troubles, has finished a well at 2793 feet with 6¼-inch casing, which is very promising, although sanded at last reports. The company, which has been working for about a year, will not re-open the well until provision for the oil, in the matter of its disposal to a marketer, is made, is understood to be doing well.

The Lakeside Oil Company's well in the Elk Hills, which is down 3221 feet, in what practical oil men declare is a very promising formation, is to be put down 500 feet more at the least, as interested oil people in Taft have purchased 10,000 shares of the stock to encourage continuance of the work. Chances are very promising for a large well of fine oil, and it is believed that 500 feet more will produce the liquid desired.

The Midway Basin, also in the Elk Hills, on section 28, 31-23, is 3,117 feet down. Water troubles. Well will be continued. The Buena Vista, likewise an Elk Hills company, was "fishing" at last reports, with considerable success, as all but a short piece of the drill stem had been taken out of the hole. The Lakeside, section 26, 31-24, is down 3,221 feet, is close to the pay sands. It is reported that a contract is being made to carry the well into them.

The rush into the Lost Hills is about over, at least for the present, and professional gun men find little to occupy them. There are a number of companies operating and trying to operate, but a vastly greater number of "companies" are doing nothing but stand by wells incapable of drilling, for the mere purpose of holding the lands located upon.

TEMPLOR-McKITTRICK OIL COMPANY.

Preparations are being made to resume operations on the Sunset holdings of the above company, and it is expected that work will be in progress within a few days. A production of from 100 to 250 barrels per day is anticipated from well No. 2 when it is brought in proper shape again. No further news.

ROCK LEASE GETS OIL.

An oil well estimated at 1,000 barrels or more was brought in recently on the W. ½ of the S. W. ¼ of section 23, 31-22, Midway, at a depth of 2,037 feet. It is thought that 500 barrels is nearer the correct figure at which to place the production.

GREAT LINERS TO BURN OIL.

The *San Francisco Call* recently ran an article saying that the Cunard Steamship Company, the greatest of British sea transportation agencies, is preparing to build the largest ship afloat, and that its motive power will be supplied by oil-burning appliances, intimating at the same time that the Hamburg-American Company is contemplating a similar innovation. The *Call* then proceeds to go into the matter of saving effected by use of oil as fuel, most of which matter is thoroughly familiar to readers of the *Derrick* by this time. As a final authority the *Call* quotes Admiral Evans, the well known expert on naval fuels, as follows:

"The saving in labor alone to the United States navy would be enormous, for one stoker will do the work of twenty when oil is used instead of coal. If I were to say how great I think the money saving would be the newspapers would think that I had lost my mind.

"Furthermore, there would be a great reduction in the number of accidents in the navy. A larger percentage of the accidents than is generally known is due to explosions in the coal bunkers, resulting from the ignition of coal gases.

"Oil fuel will remove the only tenable objection to the maintenance of a formidable fleet of battleships in Pacific waters."

The *Call* concludes its editorial with the following paragraph:

"Steamship owners on the Pacific long ago solved this problem in favor of the use of fuel oil as a commercial proposition and when the Panama canal is opened every ship using that route will be compelled by the force of circumstances to operate with this fuel."

DOHENY COMPANY MAKES SPLENDID CONTRACT WITH WATERS-PIERCE IN MEXICO.

A very large contract for the sale of oil was entered into in Los Angeles recently, which has a direct bearing on the fight between the Waters-Pierce Company and the Pierson interests in Mexico, and seems to have resulted in a big advance for the former concern. A contract is said to have been signed by E. L. Doheny of the Huasteca Petroleum Company, and H. C. Pierce of the Waters-Pierce Company, whereby the latter purchased 2,500,000 barrels of crude oil from the Doheny company at a stated price of 97½ cents per barrel, the contract to extend over a period of five years. One million barrels is to be delivered as rapidly as the producing company can make the shipments, and the balance is to be delivered at the rate of 200,000 barrels a month. The oil is to be used at the Waters-Pierce refinery at Tampico, and the fact that heretofore some of the oil used by this company has cost as high as $4.90, delivered at Tampico, imported from the Texas fields, is an indication of the advantage gained. The Mexican Petroleum corporations (of which group the Huasteca is one) are owned by Los Angeles oil men, and there appears to be no limit to the possible production. The Huasteca has a contract with the Mexican railroads for all the fuel oil they use, and even with the immense present output the demands in sight are sufficient to call for more extensive development work than is now going on on its properties.

JEWELL OIL COMPANY.

Well No. 11 was perforated the latter part of October and indications are that it will prove as good a producer as any on the property. Considerable difficulty was at first experienced through the sand flowing into the hole, but it is believed the well will soon settle down with a steady production. While a shipment of oil was recently made through the Agency, the company now has several thousands of barrels of oil in storage on the property and is looking forward to the time when shipments can be steadily maintained. Like the majority of oil companies during the last two months and more, the Jewell has been held up with its shipments on account of the lack of storage facilities provided by the Agency, but the recent alignment of the big operators assures an early resumption of shipments.

SANTA MARIA

PALMER TO JOIN INDEPENDENTS.

An authoritative announcement has been made to the effect that the Palmer Oil Company and its affiliated companies, together forming a great corporation with large holdings and a most successful career behind it, is to join the Independent Producers Agency, thus aligning with that institution one of the greatest independent companies in the state. It is announced upon the most creditable authority that the Agency and the Palmer authorities have settled all matters in regard to transportation difficulties which were said to have been a potent factor in keeping them apart this length of time, and that in the very near future the Palmer Oil Company's oil will be flowing through the Independent pipe lines upon the same terms as that of those who already constitute the Agency. The Palmer is one of the strongest companies in the Santa Maria field at the present time. It has a very large and productive acreage, has two old gushers and recently brought in a third well which is said by those who have seen it to be a larger well than either of its predecessors, and is in every way well situated, as far as it is known, to compete with the biggest factors in the production and marketing of California oil, in case it could not have agreed with them in a peaceable program. Why the Palmer has gone in with the Agency, after announcing that it would compete, that it would build and operate its own refinery and pipe line, and also operate a fleet of tank steamers for delivery, is a mystery, unless such excellent inducements were offered that the company was carried off its feet. The strength of the Independent Agency is becoming more and more apparent every day. Perhaps it was not entirely through the inducements offered that the Palmer entered into the fold; there may have been other reasons to cause it to enter the greatest producers' alignment ever known in the history of oil. Whatever the cause, the effect is the same; the Independents rule; and the Palmer is one of them.

PYRAMID OIL COMPANY.

The Pyramid Oil Company announces that its well No. 2, on the Santa Paula property came in producing 200 barrels of light oil per day, towards the end of last month. The well was finished at 1,800 feet after going through a very great strata of oil sand. Gas flows were heavy, sometimes throwing both oil and water above the top of the derrick.

The company also announces that its wells in the Kern River field have been cemented off and will be finished immediately if nothing untoward happens. The wells should be good for from forty to sixty barrels per day each, at the start.

VENTURA OIL DEVELOPMENT COMPANY.

Ventura Oil Development Company's well No. 2 is down 700 feet and No. 3 is down 1,130 feet, according to recent dispatches from the lease. Indications are very fair on both wells at present with traces of oil showing constantly in evidence in No. 3. During the latter part of September the United Mines and Oil Company brought in a well with a production of 100 barrels of 42 deg. gravity oil per day, which is exceedingly high grade even for Ventura county. The trend of the stratum indicates that it extends through the Ventura Oil Development Company's property and it is believed that both wells are on the stratum. Manager Warren C. Daniels says that the company has a most hopeful outlook.

CAT CANYON MAKES NICE PROGRESS.

The Cat Canyon Oil Company on the McCroskey Tract in Cat Canyon, Santa Maria, is doing very nicely, having already gone down slightly over 200 feet. The formation is reported as good and the superintendent is more than satisfied. The Brooks well, just south of the Cat Canyon's property, has just come in recently, good for 300 barrels and getting larger every day. The Los Alamos Petroleum well is again flowing and the New Pennsylvania company's well, in the immediate district, is reported in fine shape. Mr. David Maltman of the well-known brokerage firm, "Hopkins-Maltman Company," gave us the information. Mr. Maltman is interested in the Cat Canyon Oil Company, and as he is strictly to be relied upon, we are glad to give publicity to his company.

UPPER SANTA MARIA VALLEY ATTRACTS NOTICE.

The so-called Cuyama district, or upper Santa Maria Valley, is attracting considerable attention at present, almost all the Government land having been occupied by this time, and much claim development work being in progress, according to the *Oil World*, which seems to have exclusive information on this subject, as our correspondent has said nothing about it. The territory lies almost midway between the Santa Maria and Maricopa oil fields. Surface indications are good.

COBLENTZ, GEM, DOME, LOMPOC O. & D. AND HENDERSON.

The Coblentz has entered a gassy brown shale formation and is in a good condition with nice prospects. The Gem Oil Company has struck a high gravity oil sand at 1,775 feet and will probably be finished in short order. Well No. 1 on the Dome Oil Company's Blochman property has been perforated and the tubing has been run in. Numbers 2 and 4 are pumping an average of 500 barrels per day and numbers 6 and 7 are progressing. The Lompoc Oil & Development is reported to have struck oil on its 740 acre tract six miles east of Lompoc. The company has spent over $200,000 in putting down three wells, the first two of which were unsuccessful because of an earthquake in the case of the first well and loss of tools in the second. The company was organized January 23, 1902, and has persisted in going after the oil in spite of all obstacles. The Henderson Oil Company, adjoining the New Pennsylvania in the Cat Canyon field, has had water troubles and the company is now cementing off the bottom of the well preparatory to perforating the upper sands in a test for oil. The Western Union Oil Company in the old field will cement well No. 23 at a depth of 3,000 feet, shut off the water and try for oil again. The Western Union and Graciosa are said to be working out water troubles to the satisfaction of even the editor of the Bakersfield paper which has continually insisted that "water is Santa Maria's worst enemy"—in spite of what Santa Maria operators have said to the contrary.

The steamship Texan, owned by the American-Hawaiian line, has been able to enter into competition with foreign bottoms in their South American trade through the use of oil fuel. It is said that she will be the first commercial flying the American flag that ever carried freight to any point south of Venezuela; and she is enabled to do this only through the use of oil, which should be a matter for great and thorough consideration on the part of naval authorities.

HEAVY WITHDRAWALS MADE BY PRESIDENT.

President Taft has made two further withdrawals of oil lands from entry by the prospector, the lands in both cases being in the new Lost Hills district. The first withdrawal order was dated October 7th, although news of same did not reach the Receiver and Register of the Visalia land office until some time later. The land withdrawn are mostly all in the Mt. Diablo Meridian, and, together with about 69,000 acres of land withdrawn under order of October 27th, bring the total probable petroleum-bearing lands taken from entry in California to approximately 2,610,000 acres. The official description of the latest withdrawal has not yet reached us, but that of the first Lost Hills withdrawal follows:

Mt. Diablo Meridian, California.

T. 24 S., R. 19 E., Sec. 2, sw¼ of sw½; Sec. 8, e½; Sec. 11, w½, w½ of se¼, se¼ of se¼; Sec. 13, sw¼ of nw¼, w½ of sw¼, se¼ of sw¼; Sec. 14, all; Sec. 17, e½, se¼ of nw¼, e½ of sw¼; Sec. 20, ne¼, ne¼ of nw¼, s½ of nw¼, s½; Sec. 23, all; Sec. 24, sw¼ of ne¼, w½, w½ of se¼, se¼ of se¼; Sec. 25, all; Sec. 26, n½, se¼; Sec. 29, all; Sec. 30, e½ of e½; Sec. 31, e½ of e½; Sec. 32, all; Sec. 33, sw¼; Sec. 35, ne¼; Sec. 36, all.

T. 25 S., R. 19 E., Sec. 3, sw¼ of sw¼; Sec. 4, nw¼ of ne¼, s½ of ne¼, w½, se¼; Sec. 5, e½ of e½, nw¼ of ne¼; Sec. 9, n½, e½ of sw¼, se¼; Sec. 10, w½, se¼; Sec. 11, sw¼ of sw¼; Sec. 14, w½ of nw¼, se¼ of nw¼, sw¼, w½ of se¼, se¼ of se¼; Sec. 15, all; Sec. 16, ne¼, ne¼ of se¼; Sec. 22, ne¼, n½ of nw¼, se¼ of nw¼, n½ of se¼, se¼ of se¼; Sec. 23, all; Sec. 24, w½ of nw¼, sw¼, sw¼ of se¼; Sec. 25, w½ of ne¼, se¼ of ne¼, w½, se¼; Sec. 26, n½, e½ of sw¼, se¼; Sec. 27, ne¼ of ne¼; Sec. 35, n½ of ne¼, se¼ of ne¼; Sec. 36, all.

T. 26 S., R. 19 E., Sec. 1, ne¼, e½ of nw¼, n½ of se¼, se¼ of se¼.

T. 25 S., R. 20 E., Sec. 4, nw¼ of nw¼, s½ of nw¼, sw¼, w½ of se¼, se¼ of se¼; Sec. 5, all; Sec. 6, ne¼, n½ of nw¼, se¼ of nw¼, n½ of se¼, se¼ of se¼; Sec. 8, e½, n½ of nw¼, se¼ of nw¼, ne¼ of sw¼; Sec. 9, all; Sec. 10, w½ of nw¼, sw¼, sw¼ of se¼; Sec. 14, w½ of sw¼, se¼ of sw¼; Sec. 15, all; Sec. 16, all; Sec. 17, e½ of ne¼; Sec. 21, ne¼, ne¼ of nw¼, ne¼ of se¼; Sec. 22, all; Sec. 23, w½ of ne¼, se¼ of ne¼, w½, se¼; Sec. 24, 4½ of sw¼, se¼ of sw¼; Sec. 25, sw¼ of ne¼, w½ se¼; Sec. 2 , all; Sec. 27, ne¼, ne¼ of nw¼, e½ of se¼; Sec. 30, w½ of sw¼; Sec. 31, w½ of ne¼, w½ se¼; Sec. 32, sw¼ of sw¼; Sec. 33, ne¼, ne¼ of nw¼, ne¼ of se¼; Sec. 36, all.

T. 26 S., R. 20 E., Sec. 1, ne¼, n½ of nw¼, n½ of se¼, se¼ of se¼; Sec. 4, sw¼ of sw¼; Sec. 5, sw¼ of ne¼, w½, se¼; Sec. 6, all; Sec. 7, e½, n½ of nw¼, se¼ of nw¼, ne¼ of sw¼; Sec. 8, all; Sec. 9, sw¼ of ne¼, w½, se¼; Sec. 15, nw¼ of nw¼, s½ of nw¼, sw¼, w½ of se¼, se¼ of se¼; Sec. 16, all; Sec. 17, n½, ne¼ of sw¼, se¼; Sec. 20, ne¼ of ne¼; Sec. 21, n½, n½ of sw¼, se¼ of sw¼, se¼; Sec. 22, all; Sec. 23, w½ of nw¼, se¼ of nw¼, sw¼, w½ ofse¼, sc¼ of se¼: Sec. 25, w½ of nw¼, se¼ of nw¼, s½; Sec. 26, all; Sec. 27, n½, n½ of sw¼, se¼ of sw¼, se¼; Sec. 28, n½ of ne¼, se¼ of ne¼; Sec. 34, n½ of ne¼, se¼ of ne¼; Sec. 35, n½, n½ of sw¼, se¼ of sw¼, se¼; Sec. 36, all; Sec. 18, ne¼ of ne¼.

T. 27 S., R. 20 E., Sec. 1, n½, n½ of sw¼, se¼ of sw¼, se¼; Sec. 2, n½ of ne¼, se¼ of ne¼; Sec. 12, n½ of ne¼.

T. 25 S., R. 21 E., Sec. 30, sw¼ of sw¼; Sec. 31, sw¼ of ne¼, w½, se¼; Sec. 32, sw¼ of sw¼.

T. 26 S., R. 21 E., Sec. 4, sw¼ of sw¼; Sec. 5, sw¼ of ne¼, w½, se¼; Sec. 6, all; Sec. 7, e½, n½ of nw¼, se¼ of nw¼, ne¼ of sw¼; Sec. 8, all; Sec. 9, w½ of nw¼, se¼ of nw¼, sw¼, w½ of se¼, se¼ of se¼; Sec. 15, w½ of nw¼, se¼ of nw¼, sw¼, w½ of se¼; Sec. 23, sw¼ of nw¼, sw¼; Secs. 16 and 17, all; Sec. 18, n½ of ne¼, se¼ of ne¼; Sec. 20, ne¼, e½ of nw¼, n½ of se¼, se¼ of se¼; Secs. 21 and 22, all; Sec. 26, w½ of ne¼, w½ se¼; Secs. 27 and 28, all; Sec. 29, ne¼ of ne¼; Sec. 30, sw¼ of sw¼; Sec. 31, w½ of ne¼, se¼ of ne¼, w½, se¼; Sec. 32, s½; Secs. 33 to 35, inclusive; Sec. 36, w½ of nw¼, sw. ¼.

T. 27 S., R. 21 E., Sec. 1, w½, sw¼ of se¼; Sec. 2, all; Secs. 3, 4, 5, 6, all; Sec. 7, n½ ne¼ of sw¼, se¼; Secs. 8, 9, 10, 11, all; Sec. 12, w½ of e½, w½; Sec. 13, w½ of e½, w½; Secs. 14 and 15, all; Sec. 16, n½, n½ of sw¼, se¼ of sw¼, se¼; Sec. 17, ne¼, n½ of nw¼, se¼ of nw¼, ne¼ of se¼; Sec. 22, n½ of n½; Sec. 23, n½ of n½; Sec. 24, n½ of nw¼.

T. 24 S., R. 20 E., Sec. 30, w½ of nw¼, se¼ of nw¼, sw¼, w½ of se¼, se¼ of se¼; Sec. 31, all; Sec. 32, w½ of nw¼, se¼ of nw¼, sw¼, sw¼ of se¼.

Upon our receipt of the latest removal description we shall publish same in full.

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COALINGA---By Guy H. Salisbury

No ruling made by the Department of the Interior has attracted the public eye as has the now celebrated "Yard Decision." Not intended to reflect upon the oil industry, it yet came as a stunning blow to the oil men who had expended money, time and energy in the development of government land. That the Department of the Interior has been wakened to the fact that the placer mining law, as written and interpreted by the general land office, has no place in the control of oil lands has been very forcefully demonstrated. The agitation created by the Yard decision has advanced the cause of the oil men more than any other move that has or could be made. The attention of the Department of the Interior has been demanded by public opinion, and the department has met that demand in the presence of Franklin Pierce, the First Assistant Secretary of the Interior, the man who wrote the decision in the Yard case, who has met the men face to face who are affected by this ruling of the department. The very careful and thorough manner in which Judge Pierce has investigated the conditions about the fields affected has given promise of remedial legislation at the next meeting of Congress at the short session in December. The result of this agitation will reflect much good to the oil industry, will enable the oil men to secure laws that will apply solely to the oil mining lands, that will be a great benefit to the present conditions and will make it possible to enact laws at the next regular session of Congress that will give the oil men just consideration. From the present viewpoint we are of the opinion that a wise providence created the Yard decision, that men in authority might be brought face to face with present conditions, and suggest a remedy that would work justice to the industry. Judge Pierce has said that he would review the Yard case, that if it should develop in this review that the ruling could not be broadened to give the oil men justice, that the Department of the Interior would recommend remedial legislation at the coming session of Congress in December. This brings us to an interesting point in the controversy, brought on by the Yard decision. To secure remedial legislation in the short session (to be followed at next regular session with laws that will cover the whole question), we need experienced men in Congress, men who by long service know the "ways and means" of securing quick action. The vital interests of the industry, as it affects men developing public lands, are at stake. Will the men interested in the oil development, the oil industry, rise above partisan politics and return the men who by long service have created an influence in Congress? Or will partisan bias cause them to send untried men, new men who will require at least one session of Congress to get in line with the workings of the law body, thus losing two valuable years to the oil industry? This question is of paramount interest; the oil men only can answer it. (It is as well to state that the "tried" Congressmen have been returned.)

K. T. & O. Company.

The Kern Trading and Oil Company, on section 25, 20-14, completed well No. 65 about 30 days ago; the well started off with 200 barrels of fine fuel oil, then made a lot of sand. This brought in a gas deposit that has caused the well to flow, making as high as 3,200 barrels per day. The well has acted much like Tom Crumption's big well on the American Petroleum, that ran as high as 10,000 barrels per day. The Kern Trading and Oil Company's well is now making 2,400 barrels per day. The stroke of the pump has been set to a gauge that agitates the gas with the oil, making the well flow very regularly.

Canadian-Coalinga Oil Company.

The Canadian-Coalinga Oil Company, Limited, who are operating on the southwest quarter of section 8, 21-15, have completed a combination rotary-standard rig, are building a substantial camp, a cottage for the superintendent, a cook-house and a bunk-house. The company owns 120 acres in fee. The rotary will carry the hole down to about 1,800 feet, to the hard shells at this point, then finish up with standard tools. This well is located near the Boychester, south of Warthan Creek.

Lost Hills Conditions.

The conditions in the Lost Hills are interesting at this time, the action of the general land office in its rulings, and the withdrawal order of the President being among the more engrossing matters in the new field. Another note worthy point is brought out with the new map compiled by Wm. Forstner, E. M., that covers the locations that have been filed upon the public domain, showing in many instances a number of filings on the same location, the names of the locators being on the map, which also covers the patented lands, showing the great holdings of Miller and others. With all of this in view the work of development is going on, the feeling prevailing that the department will recognize the rights of the men who are diligently developing the public lands. Destined to become a field of some importance.

Larger Companies Interested.

The amount of material going out into the field by 6's and 8's, hauling to the west side, the east side and to the Coalinga Anticline district, has given a very pleasing evidence that we are alive after the long tie-up from lack of transportation. A large part of this work is being done by the large companies, the smaller companies having had to hold back on account of not being able to realize on the oil on hand; but now that the oil is moving, these smaller companies are getting busy with their development work.

Cory Oil Company to Develop.

The Cory Oil Company, operating in the Lost Hills, have completed a standard derrick on the southwest quarter of section 28, 26-21. The company was organized in Coalinga, a close corporation, with Heney Kerr, Marve Corey, Bill Rielly, Bill Keck, Jim Walp, Frank Cheney, Claud Barnes, Bob Cook and Joe Loeb. The work of developing this property will be pushed at once.

Security Well Making 400 Barrels Daily.

The Security Oil Company, section 8, 20-15, have cleaned out well No. 1; the well is again on the beam, making fully 400 barrels per day of very clean oil, free from water and silt; very little sand is coming.

Berkeley-Coalinga Oil Company.

The Berkeley-Coalinga Oil Company, drilling with a portable rig on the northeast quarter of section 2, 21-14, are 210 feet deep with 9⅝-inch casing; the bit has passed through three seams of oil sand, also water sand; at present in blue shale.

Southeastern Ltd. Oil Company.

The Southeastern Limited Oil Company, section 18, 20-16, are making a good showing, are over 4,100 feet deep, drilling in 6¼-inch casing. The well is reported to be showing up nicely in oil indications; the oil, being very light, does not show as much as a heavy oil, and coming up through about 3,000 feet of water makes a difference.

Santa Cruz Capital May Buy Phelps' Interests.

A rumor is current that A. P. May and some capitalists of Santa Cruz are arranging to purchase the interests of Zed Phelps in the Amy, Silver Tip and the Lucile Oil Companies. Mr. Phelps has large interests in this city and field, all made by his efforts in the field.

Republic Oil Company.

The Republic Oil Company, section 32, 19-15, are over 2,560 feet deep with 12½-inch casing in well No. 1; are now testing the upper sand before drilling into the lower sands.

Baird Cements Off Water.

The Baird Oil Company, section 24, 22-18, cemented off the water at 2,365 feet in well No. 1; reports from the hills are that the well is making a good showing at the point where the water is shut off.

Two Strings Running on Wabash Lease.

The California-British Oil Company, Limited, are running two strings of standard tools on the Wabash property, on section 24, 20-14; well No. 19 is 760 feet deep with 12½-inch casing.

Cement Off Water in Deep Hole.

The Coalinga Metropolis Oil Company, section 26, 19-15, have again cemented off the water, at a little over 3,000 feet; report this job as being sufficient to hold the water.

Levy Assessment to Continue Work.

The Cosmo Oil Company, section 31, 25-19, have levied a two-cent assessment with which to resume operations, which will go forward as soon as sufficient money has come in.

Coalinga Hub Lands Casing at Great Depth.

The Coalinga Hub Oil Company, section 22, 21-15, have landed the 4¼-inch casing at 4,110 feet; are now setting in the string of 3-inch with which the hole will be finished.

LOS ANGELES QUOTATIONS.

(Not Quoted on San Francisco Stock Exchange.)

Am. Crude Oil	.....	60
Central Oil	1 85	1 90
Cleveland Oil	01	01⅜
Continental Oil	.....	35
Fullerton Oil	.....	5 00
Mex. Petroleum, Ltd. (pfd.)	72 00	73 00
Mex. Petroleum, Ltd. (com.)	37 25	37 50
Olinda Land	.....	62
Perseus	20	20¼
Pirn Oil & L. Co.	20	.....
Section Six Oil	.....	50
Union Provident	100 87½	101 50
Storage Certificates	40	40

LATEST QUOTATIONS ON SAN FRANCISCO AND LOS ANGELES STOCK EXCHANGES, AND DIVIDENDS FOR MONTH ENDING OCTOBER 31, 1910.

Following are given the latest price quotations, bid and asked, upon the stock exchanges of both San Francisco and Los Angeles, of all listed stocks except those which have not been exchanging hands recently. A departure in our method of setting up this matter will be noted in that whereas we used to place the dividends by themselves in a separate column we now give the number of the dividend, the date, the amount per share and total disbursement to date of every company listed upon the exchange, on the same line with the price quotations:

Company.	Bid.	Asked.	No.	Date.	Amt. pr. Share.	Total to Date.
Alma Oil Co	.....	1 00	16	7 15 10	03	182,400
Amalgamated Oil Co.	.....	50 00	32	9 15 10	1 00	1,600,000
American Petroleum (pfd.)	.....	98 00	16	10 1 10	66	283,322.90
American Petroleum (com.)	.....	65 00	16	10 1 10	66	1,553,374.50
Amy	.....	75	....	.....	....	.....
Apollo	08	10	2	3 20 05	01	4,000
Associated Oil Stock	43 25	43 75	4	3 1 07	1 50	1,548,368.54
Associated Oil Bonds, 5s	94 00	.....	....	.....	....	.....
Bay City	2 50	.....	8	10 15 10	10	155,000
Blue Moon	08	11	....	.....	....	.....
Brookshire	1 12½	.....	45	1 1 10	01	442,500
California Midway	64	67	....	.....	....	.....
California Oil & Gas	.....	75	....	.....	....	.....
California Seaboard Oil Co	.....	30	....	.....	....	.....
Caribou Oil & Mining Co	14 50	15 50	66	10 15 10	1½c	841,761.99
Chicago Crude	.....	.....	2	3 25 07	½c	15,000
Claremont	1 50	1 67½	65	10 28 10	02	395,000
Coalinga Central	40	45	....	.....	....	.....
Coalinga Mohawk	1 25	1 35	....	.....	....	.....
Coalinga National	14	15	....	.....	....	.....
Coalinga Pacific	.....	.....	18	12 23 09	10	107,250
Columbia	1 00	1 25	52&53	10 25 10	½&½c	344,755.21
Cons. Midway	24	25	....	.....	....	.....
Cresceus	.....	60	....	.....	....	.....
Dabney	.....	10	....	.....	....	.....
Del Rey	.....	20	5	9 1 10	½c	19,637.50
De Luxe	1 10	1 25	....	.....	....	.....
Dominion Oil Co.	70	95	....	.....	....	.....
Empire	.....	2 75	6	10 30 10	01	12,000
Enos	95	1 10	....	.....	....	.....
Esperanza	.....	.....	26	12 27 09	02	49,450
Euclid	.....	65	42	8 1 10	01	141,500
Four Oil	.....	12	68	2 25 10	01	213,000

Fulton	.....	1 50	....	.....	....	.....
Globe	10	15	22	10 1 10	01	93,000
Graciosa	.....	50	....	.....	....	.....
Gypsy	35	50	4	8 4 10	07	40,000
Home	.....	.....	A24	10 20 10	02	488,000
Homestake	.....	.....	48	10 13 10	10	80,250
Illinois Crude	44	50	40	6 1 10	01	94,000
Imperial	.....	.....	71	7 18 10	8 00	4,000,000
Jade Oil Co.	36	37½	...	.....	....	.....
Junction	30	40	8	6 1 09	01	20,000
Kern River	.....	3 00	47	10 1 10	10	114,000
Linva Vista	.....	.....	23	10 19 10	01	84,447
Lucile	.....	8 50	16	12 20 09	10	42,727.04
Mascot	2 65	2 95	9	10 20 10	02	60,000
Maricopa National	25	28	....	.....	....	.....
Maricopa 36	.....	2 32½	....	.....	....	.....
McKittrick	15	20	....	.....	....	.....
Mecca	.....	.....	6	7 15 09	03	71,825
Monte Cristo	2 55	2 65	66	10 20 10	10	740,000
Mountain Girl	.....	.....	1	8 4 10	02	7,000
Mexican Petroleum	75 00	90 00	50	10 1 10	01½	3,587,193.45
M. & M.	25	50	....	.....	....	.....
Nevada County	15	.....	3	10 13 08	04	40,000
Nevada Midway	17	18	....	.....	....	.....
New Penn. Petroleum	50	60	5	10 15 10	01	25,000
Occidental	20	.....	...	.....	....	.....
Orcutt Oil	10	.....	....	.....	....	.....
Pacific States	30	35	....	.....	....	.....
Palmer	1 35	1 40	17	10 25 10	01	376,501.30
Paraffine	75	90	12	10 15 10	01	36,000
Peerless	4 50	5 00	77	9 20 09	06	801,000
Piedmont	10	15	7	5 9 10	01	26,877.30
Pinal	4 50	6 25	62	10 31 10	10	991,835.50
Premier	65	75	4	7 20 10	01	40,000
Producers	.....	.....	2	9 22 10	50	120,000
Record	5 00	6 00	16	10 15 10	07½	107,500
Republic	53	55	....	.....	....	.....
Rice Ranch	50	58	22	10 10 10	03	117,000
Royalty	.....	.....	20	9 20 10	33 1-3	29,400
Sacramento	1 00	.....	....	.....	....	.....
S. F. & McKittrick	15 00	.....	30	10 1 10	30	445,000
Sauer Dough	.....	2 00	56	10 21 10	03	559,198.50
Section 23	25 00	30 00	6	8 26 10	25	60,000
Sesnon	8 00	.....	13	10 6 10	06	152,000
Shawmut	.....	50	....	.....	....	.....
Silver Tip	1 50	1 65	4	2 25 10	10	30,000
Sovereign	12	.....	19	9 1 10	01	100,000
S. W. & B.	35	40	7	9 10 09	01	41,470
Sterling	2 00	2 25	23	3 15 10	12½	776,250
Sunset Monarch	1 00	4 25	....	.....	....	.....
Superior	.....	.....	12	7 26 10	01	62,500
Thirty-Three	.....	.....	60	8 6 10	4 00	1,090,000
Traders	78 00	100 00	17	5 15 10	1 00	209,146.50
Turner	1 25	.....	....	.....	....	.....
United Petroleum	104 75	105 00	110	10 20 10	50	2,461,588.43
Union	106 00	107 00	171	10 20 10	50	7,241,946.15
United Oil	74	85	5	10 10 10	01	60,088.55
Wabash	1 00	1 50	32	10 19 10	1 00	489,000
West Coast (com.)	.....	40 00	....	.....	....	.....
West Coast (prefd.)	.....	.....	6	9 1 10	2 00	124,896
West Shore	.....	.....	47	12 21 08	05	235,000
Wolverine	40	.....	....	.....	....	.....
W. K. Oil	2 40	2 50	....	.....	....	.....
Western Union	.....	.....	....	8 21 07	2 00	484,951
Yellowstone	30	40	1	10 5 08	01	8,000

Dividends paid by former companies since absorbed or sold	$ 1,459,736.12
Total Dividends paid to date	36,257,023.53
Total Dividends paid by the above companies for October, 1909	871,508.69

CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

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The Determination of Water and Asphaltene in Petroleum..

By PROFESSOR EDMUND O'NEILL, Dean of Chemistry, University of California

Editor's note: Professor Edmund O'Neill, whose photograph is herewith shown, has written several papers of great value for this magazine. Persons desirous of obtaining copies of Dr. O'Neill's other papers, entitled "Water in Oil" may have same by writing for them. There are only a few copies left which contain these papers, their popularity having caused the sale of almost the entire reserved numbers

The determination of water in oil is a problem of considerable difficulty if exact results are desired. Approximate results are much more easily obtained. The method which was in use for many years and is still used in some cases is perhaps the simplest of all. It consists in taking a measured quantity of oil, from 100 to 500 cubic centimeters (cc.), and adding to it from two to five volumes of gasoline, shaking it thoroughly, and allowing it to stand in a tall measuring cylinder for at least twenty-four hours. By this treatment the water is separated from the oil and being heavier than the mixture sinks to the bottom. At the same time any foreign matter suspended in the oil, such as clay, sand, or gravel, or particles of carbon, will also settle. The layer at the bottom, termed water and foreign matter, gives a more or less sharp line of demarcation, and the amount may be read off on the graduated cylinder, giving the proportions by volume. The advantages of this method are that the process is easily performed, requires very simple apparatus and few reagents and may be carried out by anyone. The disadvantages are that the line of demarcation is not always very plain, that the settling frequently takes place very slowly, is often imperfect, and that in the case of some oils the addition of gasoline precipitates out some of the constituents of the oil, which also sink to the bottom and may be counted as water, sand and foreign matter, thus giving, frequently, inordinately high results. For some types of oils the method is well suited and gives fairly accurate results, but as a general procedure it cannot be recommended.

A number of years ago I proposed to modify this method; instead of using gasoline as an agent for thinning the oil to promote the settling, to use carbon bisulphide. This reagent has the advantage of dissolving practically all the constituents of the oil excepting separated carbon and is practically unmiscible with water, that is, it does not dissolve appreciable quantities of water, nor does water dissolve appreciable quantities of carbon bisulphide. It has the disadvantage of being considerably heavier than water or oil, its specific gravity being about 1.3. An excess of carbon bisulphide added to the crude oil would therefore give a mixture heavier than water and therefore separated water would not sink but would remain suspended in the liquid or might even float on the top. One can get around this difficulty by using a mixture of carbon bisulphide and gasoline in such a proportion that the gravity of the mixture will be somewhat lighter than water. The addition of this mixture to the oil, which is always lighter than water, would give a solution with a lower gravity than the water, consequently the separated water will sink to the bottom and may be read off in the graduated cylinder. The line of demarcation in this case is also much clearer than if gasoline alone is used. We are still confronted with the time required for complete settling, and the fact that if the operation is carried out in a cylindrical measuring vessel it is difficult to determine small percentages of water. We can hasten the time required for separation by the use of a centrifugal. I suggested this many years ago and since that time it is almost in general use. The delicacy of reading can also be increased by using instead of a cylindrical vessel a conical vessel with a narrow stem in which the water accumulates. The delicacy of reading is correspondingly increased. Other things being equal, the larger the quantity of oil employed, the greater the amount of water

and the more accurate will be the reading, but large quantities require a large centrifugal machine with corresponding expense and danger of breakage. Excellent results can be obtained by using a bulb holding 250cc.; but by careful work equally good ones may be obtained by use of a bulb holding not more than 100 to 125cc. Sometimes bulbs holding half a liter are employed. The best way of carrying out the process is to pour a small quantity of the mixture of carbon bisulphide and gasoline into such a bulb, the stem of which is graduated in cubic centimeters. To it is then added a measured quantity of oil from a small measuring cylinder or flask, the measuring cylinder washed out with fresh portions of the carbon bisulphide mixture and these washings poured into the bulb and this process continued until the washings are perfectly colorless. From two to four volumes of carbon bisulphide mixture should be added to one volume of oil. As it is necessary to balance the centrifugal either the determinations should be made in duplicate or two or more samples be determined at the same time. It is desirable that the centrifugal should be perfectly balanced; this can best be obtained by placing the two bulbs on the pans of a balance and adding some more of the bisulphide mixture to one or the other until the bulbs and their contents are perfectly balanced. They are then put into the cups of the centrifugal machine, either floating in water or a little cotton put around the glass bulb, and the machine started. The best form of machines are steam driven, but frequently hand machines are used where power is not available. The machine should be enclosed in a strong box or protected with an iron shield, for in case of breakage the velocity of the broken particles is very great and injuries to bystanders may result. The machine should be started up gradually and run for some time at half speed. The greater the velocity of the centrifugal the more rapid will be the settling, but a speed beyond 1,500 revolutions per minute requires considerable power and strong apparatus. A much slower velocity will attain the end, but takes a correspondingly longer time. As a rule half an hour is sufficient if the velocity exceeds 1,000 revolutions per minute, but no general rule can be given, the oils differ so much in character; the relation of oil to water varies in such a great degree that while in one case 10 or 15 minutes is sufficient, in another case it must be whirled for an hour. The only way to determine this point is to let the machine run for a specified time, make a reading, then whirling it for 10 or 15 minutes longer make a second reading. If there is no increase in the water the process may be considered as finished. If the reading is increased a third whirling should be given and this continued until there is no increase in the reading. By proper manipulation very concordant results may be obtained by this method.

While in general this method for determination of water is simple, rapid and fairly accurate, in many cases results are too low. This is usually due to the fact that occasionally water is in a state of fine emulsion in the oil, minute globules of oil being surrounded by a film of water. Inasmuch as water is not soluble in gasoline or carbon bisulphide it will not be removed by this treatment and may remain suspended in the oil in spite of long continued centrifugalizing. A more accurate method for determination of water if properly carried out is by the process of distillation. This depends on the fact that if water be heated above 100 degrees C. (212 degrees F.) that it will be converted into steam and driven off from the oil in a state of vapor. If this steam be condensed it may be collected and the amount of water determined by volume. At the same time a certain proportion of the volatile constituents of the oil pass over. Inasmuch as they are light and insoluble in water, the amount of this water can easily be determined. To carry out this process, from 100 to 200cc. of oil are placed in a glass flask of about two or three times the capacity of the oil taken, connected with a Liebig condenser and a thermometer inserted in the neck of the flask. On heating gradually, as the temperature rises the gasoline and water distill over and may be condensed in a measuring cylinder. On standing, the water soon settles out and may be read directly. In many cases, particularly where the water is in the form of this emulsion, the oil may then become superheated and then the water suddenly bursts into steam, and the whole contents of the flask boil over. This may be avoided by careful heating, warming the top of the liquid first, but can best be prevented by adding to the oil before distillation about half its bulk of gasoline, shaking it up well and then proceeding to the distillation. This excess of gasoline distills over readily, carrying the water with it, and insomuch as it does not dissolve in the water, no error is thereby introduced. The heating should be continued until the temperature of the liquid in the flask reaches 150 degrees C. or 300 degrees F. It should not be continued too high, as there is danger of the oil decomposing and water forming as a result of this decomposition, which of course would distill over and give erroneous results. The foaming can be prevented in another way, viz., by internal heating which can easily be effected by immersing a fine coil of platinum or nickel wire in the oil, connecting the ends of the coil to two thick copper wires passing through the stopper of the flask and then passing an electric current of sufficient intensity to heat the wire coil. In this way the contents of the flask will become gradually warmed up and boiling of the oil and consequent distillation of the water effected without foaming. Care should be taken to prevent condensation of water in the neck of the flask and the connecting tubes and in the condenser. The first may be avoided by warming the neck and the connecting tube so that all the water is driven off in the form of steam. The water which collects in the condenser may be removed by swabbing it out with a tuft of cotton soaked in gasoline. A few drops may be added to the original distillate. This method gives the most accurate determination of water and if carried out properly may be relied on.

There are a number of indirect methods that have been suggested for determining water. One is by addition of carbide of calcium to the sample of oil. The water acts upon the carbide of calcium, liberating acetylene. By proper arrangement of apparatus this acetylene may be collected and measured in a graduated tube. A similar method is by the treatment of the oil with sodium, whereby hydrogen is eliminated. These methods are somewhat complicated, and inasmuch as the volume of gas is greatly affected by temperature and pressure, correction must be made for these variations. When the water is in a state of emulsion it does not always come in contact with the calcium carbide or sodium; consequently gas is not liberated and results will be too low. Many other methods have been suggested, such as the addition of hygroscopic salts or a strong saline solution to the oil to facilitate the separation, but usually these methods give erroneous results, ordinarily being too low. It would be beyond the limits of this article to describe all the minute precautions to be taken. Manipulation can only be learned by experiment and experience. As a rule, the higher a result in water, the more accurate the determination. The determination of the amount of water in oil is a subject of considerable importance and accuracy is a great desideratum.

Many California oils contain constituents which are insoluble in gasoline, consequently methods which depend upon the addition of large quantities of gasoline will precipitate out not only water, but these constituents. They are generally known by the name of asphaltenes. This asphaltene is a body which is quite soluble in the heavier constituents of the oil and insoluble in the lighter ones. It is a true part of the oil and should not be regarded as foreign matter. It

contains considerable quantities of sulphur and has a relatively low heat value, but nevertheless it is an oil constituent. When methods for the determination of water consisting solely in the addition of gasoline were used, frequently large quantities of this material were precipitated and counted as water and foreign matter. I have known of instances where the amount of water and foreign matter determined in this way was 40% or 50%, but as a matter of fact the amount of sand and foreign matter did not exceed 6% or 7%, and the customary deduction for water, sand and foreign matter increased in this way gave rise to disputes and sometimes to lawsuits. This material is quite soluble in carbon bisulphide and methods using this reagent are to a great extent free from the afore mentioned objections. These asphaltenes do not interfere with the determination of water by distillation.

It is sometimes desirable to determine the amount of these asphaltenes present. A simple and fairly accurate method is as follows: A sample of the oil is weighed or measured into a conical centrifugalizing flask which has been previously weighed and three to five volumes of 86 degree gasoline are added. The contents of the flask are well shaken and then centrifugalized for one hour or until the supernatant liquid is perfectly cleared and free from sediment. This can be poured off without any difficulty and the residual asphaltine, water, sand, etc., is washed two or three times with 86 deg. gasoline, centrifugalizing each time until the supernatant liquid is clear. This process is continued until the gasoline comes off perfectly colorless. The flasks are then placed in an air bath, heated to a temperature of 105 degrees C. until the weight is constant. The difference between the weight of the empty bulb and this weight is the weight of the asphaltene plus the sand and inorganic matter. This sand and inorganic matter may be determined in another sample of oil by measuring or weighing off a portion in a weighed platinum crucible, heating until all the organic matter burns off and weighing the ash. This percentage of inorganic matter may then be subtracted from the combined weights of asphaltene and inorganic matter and the difference gives you the true percentage of asphaltene. Determinations made in this way give concordant and fairly accurate results.

The above are some of the methods employed for the determination of water and asphaltene in crude petroleums. As in all quantitative methods, experience is necessary for good results. It is impossible to describe all the details of manipulation. Accuracy can only come by repeated determinations. In general, it may be stated that any of these methods may be made to give concordant results if carried out with a sufficient degree of precaution and care.

PRODUCTION FOR OCTOBER, 1910, IN DETAIL.

The corrected production statistics for the month of October make some changes in the figures given out in our last issue, but show a decline during the month of 305, 747 barrels. The average daily surplus for the month was reduced to about 19,000 barrels, and a most hopeful market outlook is now generally acknowledged.

Following is our regular detailed monthly statement, giving field, wells producing, total production, consumption and stocks during October.

Field.	Wells Producing.	Total prod. for month.
Kern River	1,519	1,343,583
McKittrick	150	398,939
Midway	276	1,145,003
Sunset	117	657,417
Coalinga	632	1,550,735
Watsonville	3	2,170
Arroyo Grande	6	3,700
Lompoc	19	72,900
Santa Maria	140	545,990
Summerland	141	5,850
Santa Paula	254	47,612
Newhall	71	11,673
Salt Lake	257	277,102
Los Angeles	416	37,358
Whittier-Coyote	141	100,710
Puente	55	3,400
Fullerton-Brea Canon	238	448,139
Total October	4,436	6,552,281
Total September	4,449	6,858,028
Difference	13	305,747

	Barrels.
Stocks, September 30, 1910	29,799,129
Production, October, 1910	6,552,281
	36,351,410
Consumption, October, 1910	5,704,981
Stocks, October 31, 1910	30,646,429
Average daily production	211,364
Average daily consumption	184,032
Average daily surplus	27,332

FIELD OPERATIONS DURING OCTOBER, 1910, IN DETAIL.

Following are the field operations during October, as given out by the report of the Standard Oil Company, with a comparison of September figures:

Field.	Comp. Rigs	Drg. Wells	Comp. Wells	Abd. Wells
Kern River	11	44	21	....
McKittrick	1	15	2	....
Midway	32	253	27	....
Sunset	11	54	5	1
Coalinga	26	135	10	....
Watsonville	....	2	....	....
Arroyo Grande	....	4	....	....
Lompoc	....	12	....	....
Santa Maria	3	38	4	....
Summerland	....	2	....	....
Santa Paula	5	31	1	....
Newhall	2	6	1	3
Salt Lake	3	21	....	....
Whittier-Coyote	2	19	....	....
Puente	....	1	....	....
Fullerton-Brea Canon	2	45	2	....
Total October	98	682	73	4
Total September	61	693	72	7
Difference	37	11	1	3

ADVANCE NOVEMBER FIGURES.

No advance figures for production in the various oil fields during November have as yet been given out. It is thought that an advance will be noticed on account of the new big gushers in Midway.

REPORT OF PRODUCTION FOR FIRST TEN MONTHS OF PRESENT YEAR.

Following is our report on the monthly production to October 31, 1910:

Month	Production by Barrels
January	5,182,889
February	4,469,650
March	5,529,900
April	6,355,000
May	6,995,825
June	7,126,544
July	7,207,890
August	7,368,320
September	6,858,028
October	6,552,281
Total production for first 10 months, 1910	63,646,317

The total yield of oil for the entire state during the entire year will in probability approximate 76,000,000 barrels.

EXPORTS OF MINERAL OILS FROM SAN FRANCISCO DURING MONTH OF OCTOBER, 1910.

The following figures were taken from the Bulletin of the Bureau of Statistics, Department of Commerce and Labor, showing the amounts and values of mineral oils exported from San Francisco during October, 1910, with comparisons for same month during 1909:

	1909		1910	
	Quantity Gallons	Value Dollars	Quantity Gallons	Value Dollars
Crude	4,201,100	60,033	6,380,000	91,200
Napthas	23,044	3,962	434	81
Illuminating	7,080,287	286,890	17,850	2,224
Lubricating and Parafin	34,431	7,446	20,524	6,563
Residuum	210	17	.....	.....
Totals	11,339,072	358,348	6,418,808	100,068

These figures speak for themselves. It is the causes leading to such a dismal showing which are not here apparent, that need attention. As has been displayed in another column, much of this falling off in the exports has come about through the fact that development of other countries has produced at home that which formerly was imported from our shores; but there is considerable truth in what the editor of the *Petroleum Review* has said, to-wit: That the unwarranted policy pursued by the Government has tended to jeopardize the sale of American Petroleum products abroad. It is generally conceded that it would be wisdom on the part of those whose interests are most greatly affected, the producers of our petroleum, to take more notice of our export trade. However, it is not our crude oil market, as shown by the figures, which is declining; it is the refined market, which means mostly that the Standard Oil Company is suffering from the diminishment, and not the general producer.

UNION AND INDEPENDENT AGENCY SEA SHIPMENTS.

Shipments by the above companies during the month of October, were as follows: Union Oil Company from Port San Luis shipped 295,000 bbls; from San Pedro, 168,000 bbls.; from Port San Luis the Producers' Transportation, through the Union, sent out 173,000 bbls, making total shipments handled by the Union 636,000 bbls.

STANDARD OIL'S OCTOBER RUNS AND SHIPMENTS.

Following are given the Standard Oil Company's runs and shipments during the month of October, 1910, as made in the official organ of the Standard:

Field.	Barrels.
Kern River	164,632
Coalinga	520,139
Newhall	6,778
Santa Maria	70,886
Midway	631,601
Total	1,394,036
Shipments	1,077,764
Surplus	316,272

SUITS AGAINST SOUTHERN PACIFIC UP FOR TRIAL.

Arguments on demurrers filed by the Southern Pacific and other companies interested in two complaints designed to oust them from $10,000,000 oil holdings in the Coalinga district were begun before Judge Ross of the United States Circuit Court on November 30th.

George D. Roberts and sixteen others are complainants in one case and Edmund Burke, the well known attorney, in the other. They base their attacks on the ground that the railroad fraudulently obtained its patents to the land.

The company was granted a large tract of land by an act of Congress July 27, 1866, to assist it in building its lines. There was a reservation that it should have no mineral-bearing lands. It filed on the lands, proved up on them and was granted patents.

The recent discovery of oil in the district contended for has made the land of imemnse value. It has caused the claim to be put forth that the lands were mineral and miners have been at work on the various sections for several years.

The interest of the United States government is evidenced by the fact that Special Agent Willis N. Mills of Washington, D. C., was in attendance with a stenographer. His purpose is to see if any of the government's rights are involved and to protect them if they should be infringed upon. The cases were submitted and the attorneys were given twenty days in which to prepare their briefs. Arguments by attorneys for the Southern Pacific were that the actions should have been brought against the company by the government, as the statute of limitations precluded individuals from initiating proceedings.

The corporation's arguments were answered in a manner calculated to disarrange their claims, by Attorneys T. S. Minot (with whom is associated Governor Hoke Smith of Georgia) and B. D. Townsend, for Roberts, and by Attorney Burke for himself.

While only about 6,000 acres of land is directly affected by this suit, the outcome will affect 500,000 acres, valued at anywhere from $30,000,000 to $50,000,000. It is said on good authority that the Southern Pacific hasn't a possibility of a chance to win the suit; but as to this, later events will show.

GAS UTILIZATION AT LAST ASSURED FACT.

Wonderful Natural Deposits to Supply Bakersfield Factories and Homes.

In our last issue we were pleased to note the fact that the California Natural Gas Company had been formed by B. C. Oliphant of Buffalo, N. Y., and associates, to handle the Standard Oil Company's big gas well's production; with the information that the towns in the immediate vicinity would first be supplied and that eventually, in the not distant future, Bakersfield would reap the benefit of cheap fuel. The "near

future" came sooner than was expected, although this magazine has continually pushed the wonderful opportunities in the gas business before the public. The California Natural Gas Company has bought the Standard's big gas well at the foot of the Buena Vista hills, which is now producing 50,000,000 feet of gas per day, by actual measurement, and is actually going to supply the city of Bakersfield with natural gas, having signed a contract with the Bakersfield Electric and Gas Company to deliver gas to the latter company, thus doing away with the manufacture of gas from oil by the Bakersfield company. The eight-inch pipe line from the well to the city of Bakersfield is already laid, it is announced, and soon the town will be enjoying the use of natural gas at a price of $1 per 1,000 feet, a reduction of one-third in price, but really a great deal larger reduction than one-third cost, because natural gas contains double the number of heat units possessed by the manufactured product, possesses about twice the brilliancy, is much cleaner in combustion and much more preferable to the sense of smell. The Standard Oil Company is undoubtedly behind the California Natural Gas Company, as the Standard was willing to relinquish its contract with the Bakersfield Gas and Electric Company, which amounted to about 6,000 barrels of oil per month, in favor of the new concern. If the wells hold out well there is no doubt at all but that the natural gas industry has a brilliant future before it.

OIL PROSPECTS IN THE CANTUA-PANOCHE REGION, CALIFORNIA.

(Report by the United States Geological Survey.)

A report on the geology and oil prospects of the Cantua-Panoche region, in Fresno and San Benito counties, California, by Robert Anderson, geologist, has just been published by the United States Geological Survey in its Bulletin 431-A.

Region Is Just North of the Coalinga Oil Field.

The region surveyed lies just north of the well-known Coalinga oil field, and the purpose of the examination was to determine whether or not the geologic conditions that exist in the Coalinga field are repeated along the flank of the Diablo range farther north. Mr. Anderson's conclusion is that the region as a whole does not promise to become a rival of the Coalinga field, but that in certain areas within it the rocks are oil bearing and the geologic conditions are favorable for the accumulation of oil.

A Possible Oil Field.

One area in particular, on the north side of the east end of the Vallecitos, 24 miles from the nearest producing wells of the Coalinga district, seems promising, and other areas in this region will probably yield petroleum in smaller quantities.

Mr. Anderson describes the geology and topography of the region and considers the oil prospects in six separate areas.

The report may be obtained free by applying to the director of the Geological Survey at Washington.

Coal Cannot Compete With Oil.

After speaking of the development by the Stone Canyon Consolidated Coal Company, whose mine is in Monterey county, of its properties, and the bad luck encountered by that company, the Report continues as follows:

Competition With Petroleum.

Development of other bituminous coal properties in Monterey and San Benito counties has been held back by the enormous increase in the production of petroleum in California and its use by transportation and manufacturing industries, which has practically eliminated coal as a steam-raising fuel in the State.

Enormous Production of Petroleum.

The production of crude petroleum in California has increased from 33,098,598 barrels in 1906 to 39,748,375 barrels in 1907, to 44,861,742 barrels in 1908, and to 54,433,010 barrels in 1909. By far the larger part of this product is used as fuel and, estimating three and one-half barrels of petroleum as equivalent in efficiency to a ton of coal, the total production of California petroleum in 1909 was equivalent to more than 15,500,000 tons of bituminous coal. California's petroleum production in 1909 was larger than the entire output of the United States in any year prior to 1896. Petroleum is a better steam-raising fuel than coal, requires no fireman, and produces no dust, cinders, or ashes, and it is not remarkable that coal mining in the State is at a disadvantage.

GAS AND OIL IN OREGON AND IDAHO.

(Report by the United States Geological Survey.)

The United States Geological Survey has just published a report on gas and oil prospects near Vale, Ontario, and Nyssa, in Malheur County, Oregon, and near Payette and Weiser, Idaho, by C. W. Washburne, geologist.

Drilling in Malheur County.

Active prospecting for gas and oil has been carried on in Malheur County for about three years. In 1909 seven companies were operating in the field, fifteen wells had been drilled, and drilling was in progress on eight new wells. At one place in Ontario a well obtains gas in quantity sufficient to maintain twelve jets for lighting a house and to supply a cooking range, but no well in the region has yet made a commercial output of gas or oil.

Field Is Geologically Unlike Others.

Mr. Washburne states that the field bears no geologic resemblance to any other oil or gas field in the United States, but expresses the opinion that the chances for developing a gas field are good. He contends that the attempts to compare strata and phenomena in one gas or oil field with those in another are unprofitable, and that the comparison shows disregard for the history of the discovery and development of gas and oil, which have repeatedly been found in places where no previous experience would justify the expectation of their discovery.

Scope of the Report.

Mr. Washburne sketches the geology of the field, gives accounts of the hot springs and mud volcanoes, considers the probable origin of the gas and oil, describes the wells and prospects, and compares methods of drilling.

The report, which includes a map of the field, is contained in the Survey's Bulletin 431-A and may be obtained free by applying to the Director, United States Geological Survey, Washington, D. C.

CUBA PRODUCES REMARKABLY HIGH GRADE OIL.

A remarkable petroleum has been discovered in the district of Santa Clara, Island of Cuba, at a depth of 1,560 feet. The best description of this oil, which we are pleased to append, is given in a recent number of the *Petroleum Review* of London:

This petroleum was extracted from a depth at 1,560 feet. It is there deposited in stratifications formed from dark quartz and serpentin, where it forms an emulsion with water. The specific gravity of the oil at 60 deg. F. is 0.731; 40 per cent of the oil distills below 100 deg. C., and 50 per cent between 100 deg. C. and 125 deg. C., and the rest below 150 deg. C., leaving above 150 deg. C. and a hardly perceptible residue. The oil represents a mixture of naphtenes and paraffins without containing any non-saturated hydrocarbons. The low boiling fractions contains paraffins and the higher boiling fractions naphtenes. The petroleum undoubtedly represents simply a filtrated fraction of a heavier petroleum, having its deposit at a greater depth.

Extry! Extry! Overproduction!!! Oil No Good, Anymore!

(By the Derrick's Own Cartoonist)

It has only recently become known that the Japanese Government tried to contract for California Oil for use in its Battleships, at an enormous cost for changing from coal to oil burners, storage tanks and appliances. The contract was in essentials as shown in the cartoon reproduced above. It is also known that Great Britan is "rabid" upon the subject of oil for the British Navy; and still many papers cried—Overproduction!!!

The Future of California Oil From The Viewpoint of a Mining Man.

By SIDNEY NORMAN, Editor of the Los Angeles Mining Review.

Editor's Note: The gifted and brilliant editor of the Los Angeles **Mining Review**, Mr. Sidney Norman, shown in the accompanying photograph, writes with so virile a pen that his magazine has become the foremost mining journal west of the Rockies. Far from possessing but a "superficial knowledge" of the oil industry and business in California, Mr. Norman has shown throughout the past year that his knowledge is exceptional and therefore when he takes timo to write, his writings command attention. Mr. Norman's remarkable success as editor and publisher of the **Mining Review** is due to his wonderful Energy and Optimism the grandest qualities of the Western Man.

It would indeed be difficult for any man—even the most pessimistic—to write in any but an optimistic manner concerning the future of California oil, and it would be an absolute impossibility for a mining man, who, par excellence, belongs to the ever-hopeful, ever-optimistic band of pioneerism. My acquaintance with the fields of California is of the most superficial kind, but I have seen more than enough to convince me that the fluid which is now gushing from the thousand wells of the San Joaquin Valley will be equal in commercial value to the coal of Pennsylvania, and withal minus the soot and unconquerable filth which is the concomitant of Eastern centers of commerce.

When we remember that the life of California oil, that is so far as it is connected with the actual commercial development of the Pacific Slope, dates back no more than a decade; when we look around us and see what it has already accomplished and when we imagine the growth that must come with the future in this, the most favored spot on the North American Continent, or in the world, we can in some measure realize what oil means to the future of the entire West and how tremendous will be its effect upon us and upon our children.

Really, when all things are considered, it must be admitted that the industry is in the very swaddling clothes of development. It is true that the monthly production has reached between 7,000,000 and 8,000,000 barrels a month, but it is also true that the methods of transportation are yet but primitive and that we consequently suffer waste of precious wealth. Capital has been chary of the oil fields up till within a very few months, and it has therefore been impossible to secure the wherewithal to properly transport the immense production now in sight and encourage others to prospect further to the front.

But capital is at last awakening to the tremendous importance of California's greatest commercial asset and within the next few years the developments will be rapid and potential. Some months ago I passed through the Midway fields and listened to the roar of the escaping gas from the Honolulu and other wells. I thought at that time that an asset, almost equal in value to that of oil itself, was being dissipated and made up my mind that the time would yet come when the cities of San Francisco and Los Angeles, embracing nearly a million people, would be heated with the gas that now roars up to Heaven, a total loss. Within the past few weeks capitalists of the East have realized the great opportunities presented and, while nothing definite has yet resulted, it is within the range of absolute certainty that natural gas will soon be added to the delights of life in California. Already aBkersfield has been granted the boon, and within a short time will be heated by a harnessed portion of the output of the fields.

It has been claimed by many that the discovery of "gushers" has demoralized the business and in other ways been a tremendous handicap. I cannot agree with this view of the situation. I am of the opinion that, while the augmented output has occasioned considerable trouble to those who are endeavoring to handle the product, it has at the same time demonstrated to the world that California has sufficient oil for all purposes and that the supply gives promise of lasting for an indefinite period. As a direct consequence, it is now proposed to equip the United States Navy with oil burners and it seems certain that the transformation will have been effected within a very few years. It is quite probable, in fact certain, that no such proposal would have been made had it not been for the unanswerable arguments furnished by the Lakeview and other gushers of its class. So that, after all, the optimist can see nothing but benefit even in the gushers, those world's marvels that have almost broken the hearts of the transportation companies and temporarily disarranged the price schedule so carefully built up.

The optimist also sees much to encourage him in the fact that the California fields have been kept free from the blight of monopoly. Through the tremendous and foresighted energy of a coterie of men, led by Mr. L. P. St. Clair, the Standard Oil Company has ben kept out of control and it will be a sorry day indeed if the present arrangements are ever disturbed. The world wants our oil and is willing to pay for it at a price based upon its competitive value with coal, and so long as competition keeps the price at such standard that the consumer can afford it and the producer still receive enough to encourage him to maintain development and prospect further afield, the demand for oil will equal the supply and support an ever-increasing proportion of our population. If, however, the business should pass into the control of monopoly, prices will be cut to lessen production, individuality will be driven out and the price will then be gradually raised to "all the traffic will bear." Meanwhile the best of the land will have passed to monopolistic control and for ever after individuals will be condemned to restricted effort and prices that will scarcely permit them to live. In my opinion the Independent Agency is the most important factor in the entire situation and, so long as it is conducted on the lines laid down by the men who have brought it to its present condition, it seems to me that it should be supported, loyally and consistently, by every man in the business, even if, at times, prices should be lower than may be obtained for trifling consignments elsewhere.

The pessimist has had his day during the recent controversy regarding conservation. In the effort to secure for the people a small share of the wealth that is being taken from the public land, some have seen a return to "paternalism,"

"feudalism" and a dozen other bogey "isms." Personally I believe it is one of the best things that has ever happened—both for the people at large and for those who are developing the California fields. No matter what may be said by the anti-conservationist in an effort to stem the tide, leasing of oil lands will tend to defeat monopoly and will at the same time give the individual as much chance as he now has. Nearly ninety per cent of the operations are now conducted on a royalty basis, running from one-tenth to one-fourth of production, but the beneficiary of this system is the individual owner. Is there any valid argument that can be adduced against a fair return to the government that gives the individual his chance to make an independent fortune and at the same time protects him in his work? I venture to say that when the leasing system has been placed in effect, as it unquestionably will be within a very short time, even the present enemies of the plan will be willing to admit that it is a sensible and fair method of settling a vexatious question and one that should have been in effect many years ago.

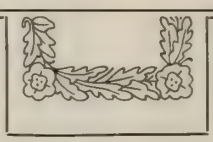
In order to fully understand the reason for the general optimism that pervades the industry, it becomes necessary to recapitulate the production figures of the past decade. In 1900 the production was but 4,324,000 barrels, of which all but about 400,000 barrels were consumed almost immediately adjacent to the fields. Five years later the production had jumped to 32,437,400 barrels, with a California consumption of 29,000,000 barrels, while in 1909 the output reached 57,689,000 barrels, of which California consumed 50,000,000 barrels. In other words, the foreign consumption of California oil, principally in other Pacific Coast States, increased from 400,000 barrels in 1900 to nearly 8,000,000 last year. This year there is little question that the same ratio will be maintained, and it is apparent that the total production will be between 75,000,000 and 80,000,000 barrels. These figures show more eloquently than words the fact that there is a demand for California oil and that it is keeping pace with the immense increase in production. If the consumption of California oil for the next fifty years were confined to the Coast States alone there would be sufficient outlet for every barrel produced. The expansion of the West is so tremendous, the outlook for the future so bright, that there is little question that this period will witness development that has never been equalled, even in the United States, where empire building has been accomplished at a pace without precedent in the world's history. But California's market extends further afield. The across-seas consumption has not been extensive in the past, yet there is reason to believe that the sonsignments to the Orient will be very large within a few years, and it is also certain that every railroad reaching Pacific Coast terminals will be compelled, in the interests of economy, to substitute oil for coal. The completion of the Panama Canal will, of course, extend the commercial zone. Thus the market for California oil is practically unlimited and there is no danger, even remote, that normal production, which means increasing production, will exceed normal and growing demand. There may be temporary periods of low prices, but the average tendency, year in and year out, will be upward and California oil will yet sell for prices that just now appear impossible.

It has been estimated by experts that the cost of motive power in California has been decreased one-half since oil came into general use. I believe this estimate is entirely conservative, and it must be remembered that the increased production has acted as a governor on the coal producer by compelling him to keep prices somewhere near the competitive points. Naval tests have demonstrated that 90 gallons of 16-degree oil will do the work of one ton of selected coal and occupies but 51 per cent of the necessary storage space. Assuming the cost of coal to be $7 a ton and oil 60 cents a barrel, the saving effected by the use of oil would be $1.60, with 49 per cent of space. Applying this ratio to every battleship of the United States Navy we have some idea of the potency of the argument that has caused officials to study the question fully. Further than that, it is cleaner than coal; it develops greater efficiency and is easier to handle. It is estimated by the government experts that the largest vessel afloat could be filled with oil fuel in six or seven hours. The great saving in this direction may be understood when it is known that the coaling of a large vessel invariably takes several days.

California oil induces optimism, it spells optimism, it is optimism in its most irridescent form. And, what is more, it is an optimism that is justified, an optimism that cannot be overdone. The Pacific Coast is the most favored spot on earth and the expansion within the coming decades will be nothing less than the marvel of the world. God, in his wisdom, has supplied us with a fuel that is infinitely more satisfactory than coal, one that will not pollute the beauty of our sunny skies, one that will change the map of the United States and make of the West a hive of commercial industry.

In the grand days that are coming, the days in which some of the first cities of this great land will spring up on the Pacific Coast, California oil will be a commercial Diety instead of king, a boon without price, the envy of all the world.

..Oil Maps..



Just Out

The Barlow and Hill book of maps of Coalinga, Kern River, Sunset, Midway and McKittrick fields, with list of companies. Also maps of entire State.

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ANGERED AT IRRESPONSIBLE REPORTS CIRCULATED BY NEWSPAPERS.

Both Evans and Spellacy Give Lie to Rank Canards Branded Untrue by U. S. Attorney-General and Chief P. O. Inspector Dickson—Sensation Mongers Struck Wrong Company.

Following the sensational raid made by the United States Postal authorities on the offices of Burr Brothers, Inc., in New York, when the notorious brothers and associates were apprehended for using the United States mail to defraud, the yellow newspapers got busy and tried to connect Admiral Evans' company, the California Consolidated Oil Company, composed of some of the very best properties in the State, with the "get-rich-quick" concerns, and thereby provoked a storm of indignation from Admiral Evans, Col. Timothy Spellacy and other prominent persons, the climax coming when specific denials were made by the postal authority quoted, and the affair was shown up to be nothing more or less than a piece of spite work by officious newspapers of malodorous reputations.

The article which provoked the wrath of Admiral Evans and Col. Spellacy, said in subsance that Postmaster General Hitchcock and Chief Postoffice Inspector Warren W. Dickson made no secret of the alleged fact that the raid upon Burr Brothers was only the beginning of Governmental activity against "get-rich-quick" concerns and that the California Consolidated Oil Company, of which Rear Admiral Robley D. Evans, U. S. N., retired, was president, was under investigation, finally saying that the Buick Oil Company, one of Burr Brothers' specials, was said to be in the infant class as a "fake" when compared with Evans' company, etc., etc. Nothing specific was said of the Admiral's company, the only tangible and reachable statement in the whole string of misleading insinuations being the allegation that the company was under inspection. It was a most malicious, unqualified falsehood, as proved by later telegraphic correspondence, but it nevertheless made a great sensation at the time, and was worded in such a way that there is probably no recourse for either the Admiral or his company, in a court of law.

Admiral Evans and a party of well known financial men were eating their Thanksgiving dinner on the Mascot lease in the Midway field when the unwelcome news that the newspapers were printing defamatory articles arrived. The Admiral wasted no time, but started a telegraphic investigation on his own account, then and there. We give the correspondence in full, believing that it speaks strongly enough for itself; we were unable to see the Admiral himself, but take the telegrams as given by him to the *Oil World* direct:

"Attorney General George W. Wickersham, Washington, D. C.

"The Los Angeles Examiner of November 23, published an article stating that Postmaster General Hitchcock and his assistant, Warren W. Dixon, are investigating the California Consolidated Oil Company, of which I am president. The article says that Mr. Dixon has said that this company is in the infant class in comparison with Burr Bros., and terms the California Consolidated Oil Company a 'get-rich-quick' concern. I earnestly request that you will use all the power of your office for a full investigation of the California Consolidated Oil Company, if you deem that necessary, and at the same time I demand that Postmaster General Hitchcock be forced to prove the assertions made by his assistant.

"I beg that you will have this done at the earliest possible moment. The article I complain of has just reached me here on the Mascot property, where I am caring for the interests of the California Consolidated Oil Company. The statement referred to, being so flagrantly unjust, I hope you will give this communication to the press. Please give me an answer at the Palace Hotel, San Francisco, where I will arrive Saturday morning.

"R. D. EVANS,

"President of the California Consolidated Oil Company."

The Attorney General of the United States replied with the following telegram:

"Washington, November 25.

"Rear Admiral Robley D. Evans, Palace Hotel, San Francisco.

"I have brought your telegram to the attention of the Postmaster General, who tells me there is no truth in the assertions that he has made the statement to which you refer. On the contrary, he told reporters in New York he had received no complaints concerning your company and was making no investigation.

"GEO. W. WICKERSHAM."

The Admiral dispatched another message, which follows:

"George W. Wickersham, Attorney General, Washington.

"Your telegram received. Thank you for acting so promptly. I request permission to give your answer to the press to counteract effect of libelous articles published November 23.

'R. D. EVANS."

To this the Attorney General replied:

"Washington, November 26.

"Admiral R. D. Evans, Palace Hotel, San Francisco.

"No objection to your giving message to press if you like, but Postmaster General will himself make an announcement to the press, probably today.

"GEO. W. WICKERSHAM."

Colonel Spellacy's Letter.

In an open letter printed in the same paper quoted above, on November 30th, Colonel Timothy Spellacy shows his deep resentment at the criticisms which were directed at the California Consolidated Oil Company by an irresponsible press. We herewith give the Colonel's letter, which shows well the character of the man whose properties were so wantonly assailed:

"As president of the Mascot Oil Company, Midway, and Premier Oil Company, Coalinga, I protest against the unjust and unwarranted stories which have been printed lately connecting the California Consolidated Oil Company, of which Admiral Evans is president, with 'get-rich-quick' concerns.

Among Coast's Best.

"The Mascot and Premier properties are thoroughly well known to every oil man on the coast as among the best oil properties in California. These two properties are now producing over one hundred and forty thousand barrels of oil monthly. This production can and will be largely increased as the properties are further developed.

"The California Consolidated Oil Company, which has purchased the Mascot property and taken the option on the Premier property is a solid business concern, with Admiral Evans as an active working head.

"Admiral Evans is now visiting the properties of the company and I regard him as one of the best posted men on the subject of oil I have ever met. The men associated with him are of the highest business standing.

Colonel Indignant.

"In justice to the important interests which I represent I record my indignation and anger that properties and individuals of the character of these should be carelessly injured. After the most rigid investigation of the entire affair, every claim which has been made will be substantiated. I have been thirty years in the oil business."

This concluded the agitation started by the yellow press, which was suddenly content to display its activities in other directions.

STANDARD OIL COMPANY'S EASY VICTORY—OTHER MATTERS.

A stiff blow was administered the forces of the Government in the Court of United States Circuit Judge John E. McCall at Jackson, Tenn., during the latter part of last month, when the Judge read a ruling to the jury instructing that a verdict of "not guilty" be rendered. The trial ends a four years' struggle on the part of the Government to prove that the Elkins anti-rebate law was violated by the Standard Oil Company of Indiana, "through scheme and device." The penalty to have been meted out in case a finding of guilty was made, aggregated more than $30,000,000. The company got off "scott-free." It is said that a great dividend will shortly be paid in celebration of this noteworthy event.

The Standard has purchased 5,000 acres of oil producing property in northwest Louisiana, known as the Trees' Oil Company's property, for the sum of $9,000,000. The property produces high-grade refining oil. The sale is said to be the largest sale of individual properties ever consummated in the United States.

The Standard's contest against the Royal Dutch-Shell combine, the next largest oil company in the world, for the world's markets, is still said to be in its infancy, and to be getting hotter all the time. The markets which particularly affect California, which are being battled for in this fight, are the Far Eastern marts of trade; this is so because the Standard is shipping to a large extent from San Francisco, drawing from its Richmond refinery; as can be seen, this stimulates the demand on the part of the great company for more California oil. If the Standard wins a victory in this struggle, which has been termed the "Supreme struggle of the greatest commercial powers on earth," the market for California oil will be considerably enlarged. Undoubtedly the Standard will show something new to its competitors every day.

Total *net earnings* of the Standard for the past twenty-nine years are estimated to be the almost incomprehensible sum of $1,130,000,000. It is calculated that the net profits of the company for the present year will total no less than $80,000,000 clear of the amount that will be paid to shareholders—a fair showing for our Infant Industry, is it not?

SECRETARY OF INTERIOR BALLINGER MAKES STATEMENT.

Secretary of the Interior R. A. Ballinger has come out with a statement that in his belief the existing law providing for the location and entry of mineral oil land is wholly inadequate and in his annual report to Congress he will recommend very important amendments to the present laws. The Secretary's statement came some time after the visit to California of Assistant Secretary Pierce, and after a thorough consideration of the data gathered by that gentleman on his recent trip. Following is Secretary Ballinger's statement in full:

By an act of Congress approved Feburary 11, 1897, public lands containing mineral oils were declared to be placers and were open to entry under the general placer mining law. Under that law no valid claim can be located without discovery of mineral. This is satisfactory as to placer mineral, which usually lies on or near the surface, but not as to oil. It takes from six months to a year or more to test oil lands and make an actual discovery. The initial expense of the discovery ranges from $20,000 to $100,000, and in many instances more than that. A paper location of prospective oil lands made prior to discovery is not usually respected by other oil prospectors. One prospector erects his derricks and proceeds with work upon his claim; another prospector will erect his derricks upon the same claim and proceed with his work also. It is then a contest between the two for the first discovery. The law should be amended so as to protect the first bona fide locator and to give him a reasonable time to make his discovery. This recommendation applies only to bona fide occupants or claimants who are in diligent prosecution of work leading to discovery of oil or gas at the time of any withdrawal of the land under executive direction.

I am in favor of a general leasing system of oil and gas-bearing lands; such a system will promote legitimate development of this industry, prevent monopoly and conserve one of the great natural resources of the country. The oil lands of the Five Civilized Tribes in Oklahoma are developed on the leasing system, the terms of the lease extending as long as oil is found in commercial quantities. The lessee usually pays to the government for the use of the Indian one-eighth in value of the oil produced as royalty. This system has worked out very satisfactorily, and is in use in many of the oil regions of the country where land is held in private ownership and not by the government. I would apply the leasing system only to areas withdrawn for classification or classified by the Geological Survey. The unknown and unexplored oil lands I would leave open to exploration and location under the general placer act as amended as I have suggested. This would give a reward to the diligent prospector. Even then the surrounding lands could be withdrawn from further location after the diligent prospector had secured his first claims.

In California quite extensive oil fields have recently been developed. The price of coal for fuel there is enormous, ranging from $11 to $15 per ton for bituminous coal and much more for anthracite. Much of the coal consumed in California comes from foreign countries—Australia and British Columbia. The New Mexico, Utah and Wyoming bituminous coals cost the California consumer about the same price as foreign coal. Crude oil is piped from the California oil fields to the bay cities and sold at the present time at 85 cents per barrel. Three barrels of crude oil at the total price of $2.44 is substantially equivalent in fuel value to one ton of bituminous coal costing from $11 to $15.

The use of oil for domestic consumption will reduce the price of fuel to the small consumer several times. I have had the Patent Office records examined and find that many patents have been issued for stoves which may be successfully used for the consumption of crude oil for family use. The reason, I am told, why crude oil has not been used extensively for family use in California is because of the heretofore uncertain production of crude oil in that State. The railroads and steamship companies are using it with satisfactory results.

I shall recommend that the Government adopt a liberal policy in opening the oil lands of California and other oil-bearing States containing public oil lands. The Government ought to support any movement which would reduce the enormous cost of fuel. The State ought to be asked to co-operate with the Government to prevent the monopoly of the oil business and effectually to secure a reasonable price to the consumer. In my judgment this can be accomplished if the State should declare the consumption of oil a public use. The State should pass a law to this effect and place the regulation of the price of crude oil in the hands of a discreet commission.

DIRECTOR OF U. S. GEOLOGICAL SURVEY VISITS STATE

George Otis Smith, Director of the United States Geological Survey, paid California a visit during the month past and took much the same trip that was gone over by Assistant Secretary of the Interior Franklin H. Pierce, upon his trip last month. Mr. Smith declared that it was his intention and that of the United States Geological Survey to do their part in the development of the West and that they realized back in Washington that they never before faced problems more worthy of attention nor more difficult of solution than those confronting them at the present time. In a speech made by the Director of the splendid service known as the Survey, he gave voice to the following:

"As a representative of the United States Geological Survey, I am always glad to go on record as anxious that the Federal Government should do all in its province and power to promote wise utilization of the nation's resources both East and West, but as a citizen I have not yet brought myself to believe that the sole obligation or authority resides in the executive department or Federal Bureau in Washington. It is because I believe that California and Maine, Oregon and Florida, must co-operate in solving these national problems that I feel it a duty as well as a pleasure to leave my Washington desk in the attempt to see things from your point of view."

COMMITTEE APPOINTED, REMEDIAL LEGISLATION BEING WORKED FOR.

At the meeting of the oil operators held the 12th of last month to decide what measures should be taken to secure remedial legislation in the land location and ownership question which has created such agitation in oil circles during the past year, it was decided to create a committee of seven operators who should collect data to show Congressmen who do not understand the situation exactly what is wanted and *why* the demands are made. The meeting was attended by 140 operators. The committee selected consists of the following members:

Hon. Frank H. Short, T. A. O'Donnell, S. A. Guiberson, C. A. Barlow, General R. L. Peeler, E. J. Miley and L. Andrews (attorney for Union Oil Company). The officers of the committee are: Chairman, Hon. Frank H. Short; Vice-Chairman, Attorney L. Andrews; Treasurer, T. A. O'Donnell; Secretary, General R. L. Peeler, of Coalinga. Mr. Barlow represents the Kern County Board of Trade; Gen. Peeler represents the Coalinga Chamber of Comerce; E. J. Miley represents the California Oil Men's Association, and Mr. Andrews represents the Western Oil Producers' Association. The entire oil interests of the State are therefore well represented, with the exception of the Standard Oil Company, the Associated Oil Company, and the Southern Pacific Company, which latter doubtless has its own secret association at work in the capital.

The committee will undertake to show the number of acres, the number of companies and the number of stockholders affected by the Yard decision, and will show the amount of money expended in good faith in developing along the proceedure established by rulings of the land office. A resolution was adopted giving power to the committee to act for the entire industry affected, and several of the committee are now in Washington doing all in their power to accomplish the object desired.

Money Needed to Carry Out Plans of Committee.

Urgent appeals have been voiced through the *Oil World* for contributions to carry through the program outlined above. There is plenty of enthusiasm, but enthusiasm alone will not pay expenses. Hence, all those whose lands are affected, and even those whose lands are not affected directly, are urged, for the good of the Industry, to contribute *immediately*.

"Articles of Faith."

The committee has drawn up an instrument or manifesto saying that its work has nothing to do with the passage of laws relating to the future location or disposition of the oil lands of the United States Government, and stating that its purpose and object is to obtain remedial legislation; patents on lands can be applied for and obtained where it is shown that the mining laws have been fully complied with, or which shall be fully complied with. To quote from the "Article" in question:

"The sole object to which this legislation is to be directed and applied is, where an association of miners have located and commenced to develop a consolidated claim of 160 acres or less in conformity with the law and, where prior to the development of oil in any well drilled on such land, and, therefore, prior to discovery entitling them to a patent, the locators or some of them have conveyed to their associates, or to a corporation organized for the development of the claim, or to others acquiring it for the purpose of developing it, and where the law has been fully complied with in connection with such claim and where the original locators in the absence of any such conveyance under the law would be clearly entitled to a patent, then the patent upon proof of such right shall be issued to the successor or successors of such locators.

"It is not sought or desired to validate or affect any existing locations where there is any question of their validity, other than on account of their conveyance, as above referred to, nor is it sought to validate or affect any locations hereafter made."

PALATIAL OIL TURBINE STEAMSHIPS HERE; RUN TO LOS ANGELES.

The Salt Lake Railroad Company makes the following announcement, showing the management of the Yale and Harvard, a much mooted question.

Co-operating with the San Pedro, Los Angeles and Salt Lake Railroad Company, the Pacific Navigation Company will install, on or about December 15, a steamship service between Los Angeles and San Francisco, with the steamers Yale and Harvard.

With the coming into the Pacific coast field of the Pacific Navigation Company, with the steamers Yale and Harvard, patrons of water travel between Los Angeles and San Francisco, will see, during the coming month, a steamship service inaugurated between these two cities that will be only five hours slower than the fastest train service now operating.

The Yale and Harvard are express triple screw turbine steel steamships, and have been plying between Boston and New York for the Metropolitan Steamship Company since they were launched in 1907. They were the first ships of their type to adopt the turbine engines, and in 1910 they commenced using oil instead of coal.

The Yale and Harvard are sister ships, each being 407 feet long and 63-foot beam. They are today the fastest merchant vessels flying the American flag. They have sleeping accommodations for 800 passengers.

No definite schedule has at this time been announced, but it is intended that four sailings will be made from each port each week, leaving San Pedro in the afternoon and arriving at San Francisco the following morning. Sailings will be made from San Francisco in the afternoon, arriving at San Pedro the next morning.

TAKING TEXAS' MARKET—AT TEXAS' OWN FRONT DOOR.

The following surprising information has just been given out to the press in the form of a news item:

The Independent Agency has made a contract with the Cananea Consolidated company at Cananea, Mexico, for the delivery of 1200 barrels of fuel oil per day, and shipments will commence from the Kern River field at once. The price at which this contract was made has not been made public, but it is stated to be a fair one. This is one of the most important deals which the Agency has yet put over. It is an invasion of the Texas field, from whence the Cananea company has heretofore secured its supply.

AGENCY'S SHIPMENTS INCREASE—PRICE DROPS ONE CENT.

A dispatch from Los Angeles says that members of the Independent Producers' Agency will receive thirty-five cents for their October oil sales, a drop of one cent and .0016 mills from the September price per barrel. Total sales for the month amounted to 750,000 barels, exceeding the previous month's delivery by some 75,000 barrels. Agency business continues to increase steadily.

CALIFORNIA DERRICK

The Oil Authority of the Pacific Coast.

Published Monthly

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MISTAKEN IDEA DISPLAYED.

Some time back the *Derrick* was pleased to make the assertion that one of the reasons for the falling off in the exports was probably the fact that American capital owned so much productive foreign oil producing property that there was no necessity, in such countries, for the continuance of importing American oils. This would seem to be a self-evident fact, but evidently it is not deemed so by one of our contemporaries, which takes the stand that the *Derrick*, whether wilfully or unwilfully, misrepresented the conditions prevailing in the export trade. The "unwarranted policy which the American Government has been pursuing of late has had a great deal to do with jeopardizing the sale of American petroleum products abroad," says the *Petroleum Review* of London. This, we do not hesitate to confirm; it is undoubtedly the truth that the Government has "gone after" the Standard Oil Company; and this to such an extent as to seriously hamper the profitable exportation of American refined products. Likewise it is true that America is today as much as ever in need of foreign markets "in order that the premier position which her petroleum industry holds shall be held." But—this does not prove that America's home market for petroleum, and especially for fuel oil, is not increasing; and it is still farther from proving that Americans do not hold productive lands in foreign countries, which point was ignored by our much esteemed contemporary. In regard to this latter statement we believe that it is necessary to give only one instance as proof of the truth of what we printed, to-wit: That a very good reason for the lessening of our exports is found in the holdings of American capitalists in foreign lands. For instance, it was costing the Waters-Pierce Company, of which H. Clay Pierce is president, according to reliable authority, somewhere in the neighborhood of $4.00 per barrel for every barrel of oil exported from Texas to Mexico. The necessity for this oil is obvious when it is recalled that Mr. Pierce has been fighting the interests of the great Pearson company for the control of the oil market of Mexico. What was Mr. Pearce to do for a cheap oil? What he did do is still fresh in the minds of the oil fraternity; he bought from *American interests in a foreign country*. He bought from E. L. Doheney, of the Huasteca Petroleum Company, 2,500,000 barrels of crude oil at a stated price of 97½c per barrel. This same American company has a contract with the Mexican railroads for all the fuel oil they use.

We believe that this one instance will go far to prove the truth of our contention, and request for it the courteous consideration of our contemporary.

MISCONCEPTIONS "WAY BACK EAST."

All over the United States, hanging like a black pall before the eyes of a people who fear to look into what may be a terrible Hades, and which custom and obstinacy will not allow them to hope will be anything else, looms the spectre of one paramount evil amongst all corporation evils, the spectre of fear of the Standard Oil Company. The fear of this wonderful corporation is not confined to the unknowing and ignorant alone; even men of intelligence and high standing have been for so long a time within the shadow of this fear that they commonly share it, and it is a rude awakening for them to have the pall lifted, the shadow dispelled and the light of truth penetrate into the blackness which has been peculiarly reserved for the spectre of evil supposed to represent the Standard Oil Company. For to those who know nothing of conditions which they fear the Standard Oil Company is one of the "Allied Villainies" east of the Rocky mountains; and even here in California, where independence is the rule and where the Standard's strength is actually known, there are a great number of people who believe that the Standard is forever trying to break the market, that the Standard has a throttle clutch upon the necks of the producers and that the Standard can at any time bring on a calamity compared to which the original flood was a mere incident; all of which is absolutely and utterly wrong, as those well informed can attest.

A certain United States judge visited the fields during the past month; he was a man well informed in the procedure of the law, a corporation attorney before he became a judge; a man well known and generally credited with breadth of view and understanding. This judge went into the San Joaquin valley with the fixed idea that the Standard Oil Company owned the state and all therein, and he took occasion to remark to those accompanying him, whose guest he was, that it was a pity the Standard Oil Company owned all the wonderful oil resources being shown him. This remark elicited such a smile and provoked such a general merriment among his fellows that the judge hastened to ask the reason for the laugh. It was made plain to him in short order. Not a single company in sight of the party, not a strip of land nor an oil producing well, belonged to the great Octopus; although the Standard was taking oil from several of the companies at a very good price. The judge saw a great light. But his case is typical of a very large majority of cases of delusion among our Eastern contemporaries who do *not* see the light. The actual fact of the matter is that the Standard Oil Company controls only about one-fifth of all the oil produced in the state. The Associated, the Union, and the Independent Agencies are all more powerful in the oil realm of California than is the Standard Oil Company.

The idea of a malign influence exercised by the Standard is also quite a prevalent one. Where this malign influence comes in we cannot exactly say, but it enters very largely into the Eastern attitude, when the subject of investment is broached. For instance, a number of well known Los Angeles gentlemen formed a company with a moderate capital and something like three hundred acres of good land for development, all leased, and started for New York to get capital to float the company. They succeeded only indifferently because the idea was general in Old N'Yawk that the Standard exercised the before-mentioned malign influence, that it not only could but would bring about a crash, and that their savings would then be entirely swept away. When most of these people had been informed that the Standard controlled about one-fifth of the oil here they were greatly surprised, and refused to believe the statements, saying that the Standard undoubtedly controlled in secret what it did not publicly own, and that they therefore felt they must decline to invest. Upon being reassured they agreed to let the matter be decided for them by a practical "California Oil Man," one whom they knew had holdings in the Golden State, and who was their friend. The matter was taken up with this gentleman, whose lands were finally located (at a considerably later date) by the promoters some ten miles from any development work of any kind, and this gentleman gravely informed the would-be

investors that the Standard was in full control, and for that reason he had never developed his vast holdings, but had let them lay idle; but he had a fine bond sale on which would undoubtedly net the buyers five per cent; and the investors took the bonds.

For they had ears that heard not and eyes that saw not; and if they had seen they wouldn't have believed. They were controlled, like a vast number of otherwise intelligent people, by a spectre; and as they seem to love to live in this shadow, there is doubtless no use in trying to dispell it. But we don't need to believe it out here.

CLEANSING THE INDUSTRY.

The entire country has recently been under the necessity of opening its eyes to the fact that all is not gold that glitters Even the Golden State has spots which are arid; even the most beautiful prospectuses have the flaw, sometimes, of being prospectuses only. Oil wells that do not exist and oilfields that do not exist; land titles that do not exist and futures that never can be, can be beautifully portrayed upon beautiful paper, with plenty of margin space and plenty of gusher adornment.

If a worm starts a little hole in an apple, that is no reason to believe that the entire apple is rotten; but most people will throw away the apple. Likewise, a great many people, after having allowed themselves to be grossly deceived into buying shares in a fraudulent company, which consists mostly of beautifully embellished paper, suddenly believe that the whole industry is rotten. It isn't; but the company, like a worm, has eaten a small hole in the side of the healthy apple. People look at the hole in the doughnut and not the doughnut itself. And yet the hole is of their own making, because they allow themselves to take a long chance, because they are too willing to believe everything that is said to them and finally, because they are too lazy, often, to look into the title of ownership of the company with which they contemplate placing their money; in short, they fail to use any judgment in the investment of their often-mentioned "hard-earned" money.

While the *Derrick* can in no way condone the notoriously fraudulent and "outrageous" conduct of the Burr Brothers, we still are under the impression that there is considerably more than one reason for their success in their "get-rich-quick" tactics. For instance, time and again their operations were exposed here in California, alike by an indignant press and the State Mining Bureau, until their methods should have been known from one end of the earth to the other; but certain New York newspapers, in their avidity for money from any source whatsoever, would not print the Western exposures, and continued to take Burr Brothers' advertisements until the last.

Everybody with any knowledge of the newspaper business at all knows that a newspaper which takes the kind of advertisement run by Burr Brothers, while fully acquainted with their methods of fleecing the people, is no better than the Burrs themselves; and those acquainted with the newspaper business will recognize further that the same papers will immediately raise the largest outcry of all when the grand finale is enacted. That is their stock in trade; chicanery, deceit, hypocrisy. Hence it will be seen that the Burrs are not alone in their wretched exposure, but they are like the scapegoat in the time of Abraham; the entire brunt of the evils which they and their kind and those assisting them have done falls upon them only; and the self-righteousness and conscious rectitude of their fellows becomes at once most apparent.

However, we did not start to preach a sermon on the culpability of the newspapers which knowingly took Burrs' advertising and thus aided to rob those who were foolish enough to invest with the Burr Brothers. What we wish to impress upon the public is that the Burr Brothers' apprehension is only an incident in the oil business; that Burrs handled or mishandled but a few companies, and with few chances of success, and that, with their cleaning out, and the cleaning out of others in the same business, the Oil Industry of California takes a decided step forward, and promoters of honest investments are placed upon a far securer basis and with more chances of success in aiding the development of California's greatest industry; the production of oil.

ZEALOUSNESS OF OUR STATE MINERALOGIST.

In spite of the sarcasm, irony and insinuations flung at him by a number of newspapers in the oilfields, our zealous State Mineralogist, Mr. Aubury, continued his attempts to "round up" some of the alleged faking companies which were thought to be doing business in the oilfields, until he succeeded in placing the United States postal authorities upon the trail of Burr Brothers with the ultimate known result that Messrs. Burr & Co. now rest peacefully in the Tombs, New York, their pernicious activities in the realms of Frenzied Finance at an end.

Having "cleaned up" the Burrs, Mr. Aubury, not content to rest upon his glorious past, dug with remarkable assiduity into the records of sundry other companies, the outcome being that C. Howard Merritt, secretary of the Haiwee Pacific Oil Company, was placed under arrest on a charge of obtaining money under false pretenses, the charge being sworn to by one of Aubury's assistants. Mr. Merritt, who resides in Oakland, charges that his arrest is due entirely to the officiousness of the State Mineralogist, but he will have to prove it to the judge.

We are not in the muckraking business and so cannot go too minutely into all the details of the company's affairs, but it appears that they have levied some fifteen assessments, from which more than $120,000 was secured, while the books of the assessor of Inyo County, where the company is supposed by the shareholders to possess its valuable lands, show that the value of the properties is assessed at only $2,000—which is, to say the least, quite a discrepancy. Mr. Aubury's zeal may yet be the undoing of all the "fakers" in the oil business, for which reason it is very much to be commended, as long as Mr. Aubury confines it to exposing companies which need exposure.

PYRAMID OIL COMPANY.

Mr. Theo Bunje of Hongkong, representing extensive oil interests of Sumatra and Borneo, is making a trip of inspection through the oil fields of California for the purpose of acquainting himself with the machinery used in the drilling and operation of oil wells in this state. Mr. Bunje will visit the Santa Paula field, Ventura County, first, where he will inspect the property of the Pyramid Oil Company, in which some of his Hongkong associates are stockholders. From Santa Paula he will go to Midway, where he will spend several days studying the methods and machinery used in the difficult formations there, such as the hard shells and shifting sands. A couple of days will also be spent in the Kern River field. Mr. Bunje predicts a great future for California oil in the Far East and says that in the last year the California product has come into much greater demand there. He makes the statement that if China had proportionately as many railroads as the United States and all their locomotives should use oil as fuel that there would not be sufficient production in all the world's fields to furnish the supply.

Mr. A. E. Preston, who, for seven years has been with the Union Oil Company of California, the largest oil company in the state, has severed his connection with that organization and accepted the management of the field operations of the Pyramid Oil Company.

Future Scientific Articles of Interest

"WILL MR. PRUTZMAN WRITE AGAIN?" THEY ASK.

"Will Mr. Prutzman write for the *Derrick* again?" has been asked so many times in the last month, by our readers, that we have felt compelled to ask Mr. Prutzman whether or not he would be able to write anything more for us. Mr. Prutzman is a very able, a brilliant writer, and what he has to present is of so vital and interesting a nature that it necessarily has attracted a great deal of notice. We were pleased to send on some of the letters received by us for his consideration, and, after reading them through, he amended his decision of a month or so back, when he told the editor that he would "never do it again" (because it was so much work), and now promises us a paper on the peculiar properties of Colusa County petroleum—which he barely mentioned in his masterly treatise concluded in our November number, on "The Origin of Petroleum." The coming article will undoubtedly possess unusual value and we await it eagerly.

Many people, realizing the great value of Mr. Prutzman's articles, as they ran from month to month, wrote to the editor and asked if there were no way to show their appreciation of Mr. Prutzman's work; would it not be possible to get him a doctor's degree, or to see that some academic honors were paid him? they asked. As to this, we do not know. Frankly, we do not believe that Mr. Prutzman would accept a degree or any other honor without very strong pressure; and likewise, unless a man has a terrific pull with the proper authorities, it is a matter of difficulty to have him honored in the proper manner. Hence we believe that the only kind of honor Mr. Prutzman cares to receive is the honor of being a scientist of the very first water; a petroleum chemist of note; a steady student of the mysteries of petroleum chemistry. All these things he is now—and more; the highest type of American citizen, who desires nothing so much as to make good and be let alone. But here we fear we intrude; we hope that Mr. Prutzman will forgive this small tribute.

MR. ALEXANDER, ASPHALT EXPERT, AGAIN.

D. Basil Alexander, Pacific Coast Chemist for the Barber Asphalt Paving Company, who wrote a most valuable article for us some time back, has, at the solicitation of the editor, and of many friends, promised us another paper, somewhat on the lines of his first, but probably a little more scientifically worded, as it will be a continuation of his former paper. Mr. Alexander has given us no stated time to expect his article other than that it will appear, "early in 1911"—and to this we are pleased to add, "the earlier the better." Readers, watch for Mr. Alexander!

EX-STATE MINERALOGIST'S WRITINGS.

A most reasonable theory is advanced in this number of the *Derrick* accounting for the gushing of gushers. A. S. Cooper, former State Mineralogist, gives his view of the gusher's cause, supporting his ideas with scientific proofs; ideas which cannot help being interesting to oil men.

Mr. Cooper is going to continue writing for the *Derrick:* and we can promise our readers some of the most readable matter obtainable, filled with practical interest and suggestions which can be put to use in the oilfields to the utmost advantage.

One of the earliest papers following this issue, will be entitled "Natural Gas in the Great Valley of California," an article which no gas or oil man can afford to miss, containing as it does data which has not been given before this time, if we are not mistaken.

In addition to this, Mr. Cooper has several other articles under preparation and will contribute them from time to time during the coming year.

EARLY DAYS IN THE MIDWAY AND SUNSET OILFIELDS.

In the near future we shall publish the reminiscences of one of the first men who drilled a hole in the Sunset-Midway oil field, a man well known to-day throughout the State, well-to-do, highly respected and now in business. We are not permitted to divulge the identity of the writer of these promised reminiscences, the stipulation having been made when the promise was given that they should be written for us, that the writer's name be kept secret.

The history of the first well drilled in Midway dates back some twenty-five years and more. It is not this so much, as the later history (which still is early history, paradoxical as that may sound), the story of the late '90's and early 1900's, before and immediately after the Standard Oil Company's pipe line was laid into old Sunset, which will be dwelt upon. The story of this wonderfield field as told by a practical oil man whose judgment has been almost unerring and whose ability and character have brought him to a high place in the ranks of California's successful oil men, cannot fail to interest old timers and new recruits alike. We hope to publish this in an early issue.

"Uncle Tim" Spellacy and "Fighting Bob" Evans got a lot of free advertising which they did not wish recently; but they evened up with their advertisers nicely.

NEW OUTLETS FOR OIL; HOW WILL THEY BE SUPPLIED?

It is stated that all the transcontinental roads leading into Puget Sound will soon substitute oil for coal as fuel on all the locomotives crossing the Cascade and Rocky mountains. The Chicago, Milwaukee and Puget Sound Railway has proved that oil brought from California is cheaper than coal mined alongside the company's tracks in Washington and Montana. The Northern Pacific is building a great oil storage tank and is gradually equipping all its locomotives with oil burners, as will the Great Northern. The *Nome Daily Nugget*, Nome, Alaska, says that the expense of operating dredges on the Solomon river is so great because of the cost of fuel that oil is being considered as fuel, the Associated Oil Company having been reported to have bid for their supply already. One of the dredges is already equipped with oil burners. An effort is being made, it is announced, to have the United States transports running between San Francisco and the Philippines converted into oil burners, which will save them from a trip to Japan every trip, to get coal, and will about double their steaming radius as well as save $55,000 per vessel, annually. It is also stated that the Cunard line will construct a huge oil-burning steamer. This, it is anticipated, will not greatly affect the California oil market, as the supply would undoubtedly be drawn from the Mid-continental fields, or from Texas. If the Western market continues to grow, how will California ever be able to supply it; still more, how can our fields supply a foreign market at the present rate of expansion?

NEW ROTARY DEVICE WHICH "REVOLUTIONIZES."

C. E. Frederickson of Coalinga, who invented a device known as the Electric Fishing Magnet, has perfected a new rotary tool which he expects will be invaluable to oil operators. The invention consists of a collapsible fish-tail rotary bit with special swivel jars with which to jar it into place and also into the collapsed position. The new invention works in the same manner as a rotary, with the exception that it is unnecessary to pull the drilling tubing to sharpen or replace the bit; a tremendous advantage. The regular rotary method of usage of the new tool applies. A good description of the invention is given in a recent number of the *Coalinga Oil Record*. The description is well worth reading.

FAILED TO GET CHEAP OIL; STILL HUNTING.

The Los Angeles Oil Consumers' Association, trusting too easily to what they wished to believe, to-wit, that oil would descend to a price where they could pick it up cheaply, were unable to get any prices satisfactory to them, and so far have failed to make a contract for their oil. Oil was offered them at 90c and 92½c per barrel, delivered, but this was adjudged too much, and the association sent representatives into the oilfields in search of a cheap fuel. It looks as though they had better have taken that 90c offer; by the time they have purchased oil at 40c at the well, if anyone will give it to them at that price, and have transported it from the Kern River fields or West Side fields to Los Angeles, by rail, when the rush season is upon the railroads, they will probably have suffered enough inconvenience, delay and other trouble to make them wish that they had had it delivered at $1 per barrel. They are still hunting for oil.

CLEVELAND OIL COMPANY'S PECULIAR ACTIONS.

The auditing committee of the Cleveland Oil Company was at last reports digesting a lengthy report on the financial condition of the company. The company's stock is very low, but someone is buying it up steadily, although its affairs are badly muddled. The company has subleased the N. ½ of the N. E. ¼ of section 4, 32-23, Midway, to the field manager of the American Midway Oil Company, but has refused to state upon what terms. The company is also being sued for the forfeiture of its Kern River lease; and with all these troubles *somebody* is buying up the stock; what is the answer?

PHILIPPINE ISLANDS HAVE PARRAFINOUS OIL.

After a thorough investigation of the Taiabas, P. I., petroleum deposits, very interesting results have been obtained and recorded. A crude oil has been discovered resembling the parrafin petroleums of Pennsylvania. We herewith give a description of it:

"This petroleum is of light brown, and, sometimes red-vinous color, with a blue dichroism, of specific gravity 0.8,325 at 15 deg. C., flashlight about 0 deg. C., of a very pleasant etherous odor.

"It commences to boil at 90 deg. C., yielding the following fractions: 90 deg. to 150 deg. C., 39 per cent, specific gravity, 0.770; 150 deg. to 300 deg. C., 44.5 per cent, specific gravity, 0.850, and 16.5 per cent of residue above 300 deg. C. Of aromatic hydrocarbons only xyloles have been found in it, but no benzole, toluole, or derivatives of naphtalyne. Being refined by means of acid and alkali, the oil had a specific gravity of 0.793. It contains 8 per cent of solid paraffin, and 0.08 per cent of asphalt. The oil represents a paraffinous petroleum, very good for obtaining benzine, kerosene, lubricating oils, paraffin and various greases. At 5 deg. C. the refined petroleum completely solidifies."

RESERVOIR GIVES WAY—LITTLE OIL LOST.

Recently the first completed tank of the Producers' Transportation Company, located at San Luis Obispo, Cal., broke under the strain of 996,000 barrels of oil, about 125 feet of the retaining wall giving away and allowing the oil to escape into the huge fire wall which had been made with the dirt excavated in order to make an absolutely level place for the reservoir, and which completely surrounded the reservoir when it was completed. It was a good thing that the dirt wall did surround the concrete tank. It saved practically all of the oil. The first tank completed being upon higher ground than the second, it was determined to allow the oil to flow by gravity from the earthen reservoir, as the dirt wall had become, perforce, into the second tank. This was successfully done. It is said that the first tank will be reconstructed, or rather, repaired, and used as soon again as possible. Photographs of the broken reservoir in process of construction were run in this magazine some time ago.

GENERAL NOTES CULLED FROM THE PRESS.

It is said that the United States Government will seek to recover valuable patented lands in the Elk Hills which were granted to the Southern Pacific Railroad during Roosevelt's administration, by instituting a suit against the company, in spite of the fact that there was no mineral reservation clause in the grant.

It is said that the directors of the Independent Agency, at a meeting held in Bakersfield on the 7th inst., agreed among themselves that the production of the members should be curtailed as much as possible until the deliveries on the new contracts and Associated business begins; it is also said that another effort will be made to get all the outsiders "into the fold" because there is an alleged tendency on the part of the Standard Oil Company to slash market prices. A pipe line to Los Angeles, at an estimated cost of $1,000,000, is also said to have been proposed at the recent meeting. Action on this subject not mentioned.

The Lost Hills Syndicate, consisting of J. M. Danziger, E. A. Wiltsee and J. M. Kent, is reported to have pinned its faith in Lost Hills as a producing proposition and to be preparing to operate ten strings of tools on their property.

The Associated is said to have made a good strike on section 26, 30-24, in the Elk Hills, the oil having been declared to test 36 gravity. This report is hardly believable, but may be true.

The Coalinga Chamber of Commerce is against the leasing system. President Taft is strongly for it. The President, in his recent message to Congress, advised that when discovery is made a lease should be executed to him upon terms securing a minimum rental and proper royalties to the Government, and also securing the conduct or management of the lease according to the best methods of caring for it. The President gave his opinion that an oil or gas lease should not run longer than fifty years, differing in that respect from coal leases, and that provision should be made against assignments that would lead to monopolization of the product. The President urges upon Congress an act allowing the prospector for oil or gas two years to prospect over a tract of Government land, upon the payment of a small sum as a license fee. All these views are liberal and seem to be filled with a spirit of justice, and it hardly seems as though the Coalinga Chamber of Commerce should stand out against their fairness. The days of forty-nine have gone and nothing remains of them except the vast chances allowed great aggregations of capital to monopolize the remaining sources of wealth. Such being the case there is no doubt but that new laws are needed, whether or not they conform to old views which fear "paternalism." For even a mild form of "paternalism" is a million times better than the steadily encroaching menace, Monopoly.

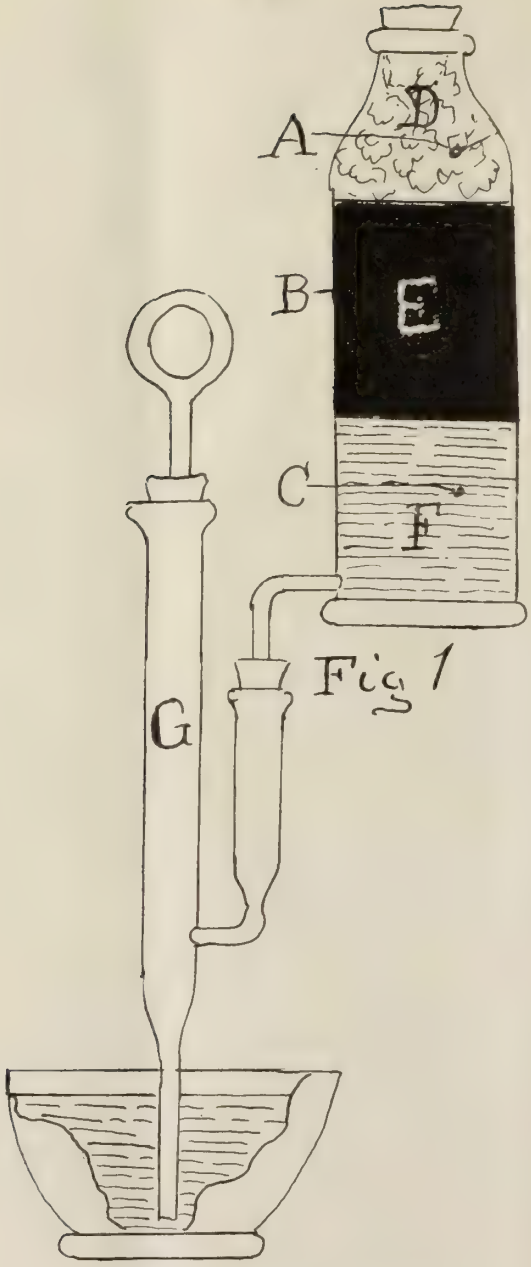


Fig 1

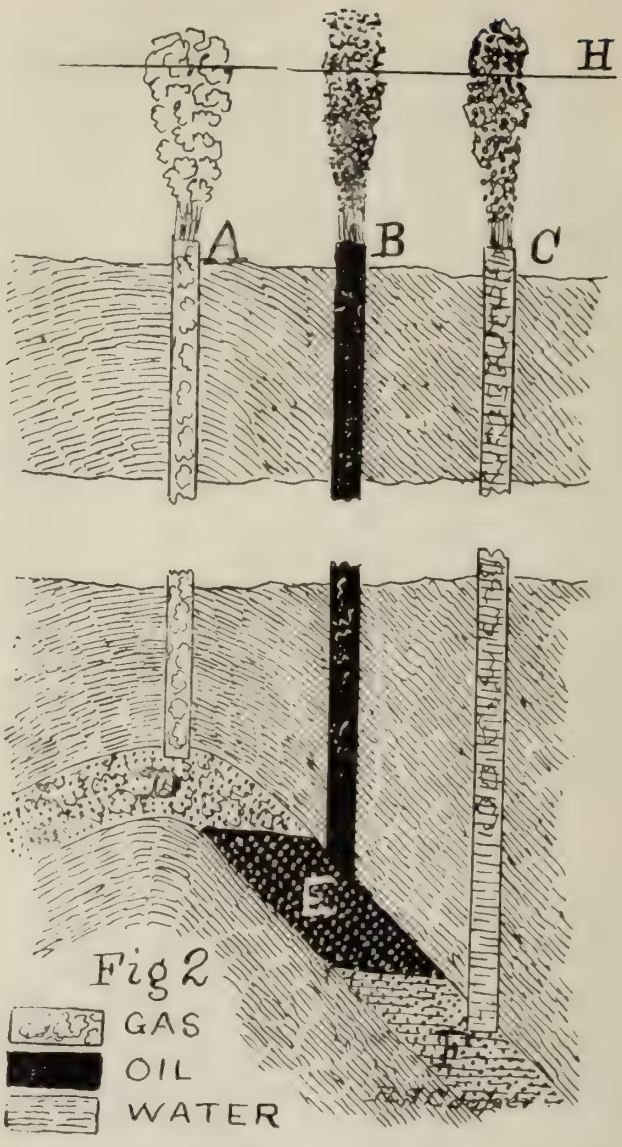


Fig 2

CAUSES PRODUCING A GUSHER.

(By A. S. Cooper, E. M., Former State Mineralogist.)

A bottle, D. E. F., figure 1, is partly filled with water, F, and partly filled with oil, E, and is charged with gas under pressure. If a small hole is drilled at A, and the pump G is slowly operated, gas will escape; then a mixture of gas and oil, followed by gas and water, and, finally, water.

When a small hole is drilled at B and the pump G is slowly operated, gas and oil escapes, then gas and water, and, finally, water.

When a small hole is drilled at C and the pump G is slowly operated, gas and water will escape to be finally succeeded by water. When a small hole is drilled at C and the pump G is allowed to remain quiet, gas and water escape, then gas and oil.

Having satisfied ourselves in regard to these tests, we take occasion to make a comparison. The action of gas, oil and water, in a porous or seamed strata, encased in a practically impervious strata, is the same as the action in the bottle, with the difference only that a formation is, naturally, millions of times larger than the test bottle.

When the water and oil in a formation is saturated with natural gas, and where the surface level of the water (G. H., figure 2) in the formation is higher than the mouths of the wells A. B. C. (figure 2), a hydrostatic pressure is exerted in the formation that will cause the wells B and C to flow. As the gas in the well A is lighter than air, no hydrostatic pressure will be required to produce a flow, although a hydrostatic pressure will largely increase such a flow.

From a well drilled at A, gas will escape; then gas and oil; then gas and water, and, finally, water.

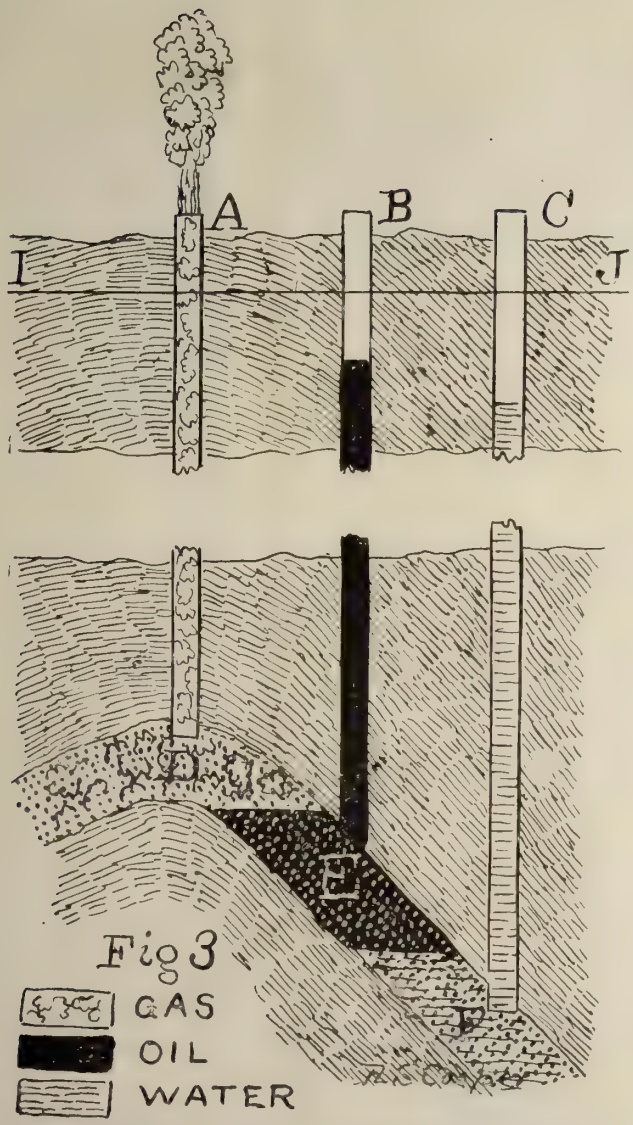


Fig 3

When a well is drilled at C, gas and water will escape, to be finally succeeded by water.

Such being the case the column of water in the well B, and the column of water in the well C will be lightened by liberated gas and will be carried to an altitude higher than the surface level of the water in the formation, the gas acting as a gas lift.

When the surface level of the water, I. J. (figure 3), is lower than the mouths of the wells A. B. C., and the water and oil are saturated with gas, the hydrostatic pressure in the formation will not force the oil in well B, nor the water in well C, to the surface. But the gas in well A, being lighter than air and under a hydrostatic pressure, will flow until the well is stifled by the oil.

If the oil and water are not too far below the surface, the wells B and C can be caused to flow by removing and keeping removed a sufficient quantity of water from the upper part of the column of water from the wells, with an air lift, or, if it is desired to conserve and use the gas present, by a gas lift.

By the use of an air or gas lift the gas in solution with the oil or water being released by decrease of pressure will act as a natural gas lift.

If gasolene is present in the gas the compressor can be made to serve two purposes. The compressor will not only be compressing the gas for the use of the lift, but will also remove the gasolene.

OIL NOTES AND OBSERVATIONS ON CONTEMPORARY EVENTS.

The *Petroleum Review* (London) says: "Given a continuance of the present activity until the end of the year, America will be in a position to establish yet another record in crude oil production."

The Australian and Canadian Governments grant bounties for the production of crude petroleums; the American Government proposes to tax the production through the leasing system. The chasmal difference in policies is only equalled by the chasmal difference in productions.

An English patent has recently been granted to Julius Tanne, a Galician chemist, and Gustav Oberlander, of Berlin, Germany, for an invention relating to a process to enable the solid hydro-carbons contained in fatty mixtures such as those of mineral oil and tar residues, to be as perfectly separated therefrom as possible. The process is said to permit the raw material to be utilized to a far greater advantage than hitherto, and to take considerably less time. The yield of hard paraffin is also said to be considerably increased.

OIL MEN: Look at This

WANTED: Five Thousand Dollars Only

Capital needed to place the finest household specialty ever patented on the market. Will command immediate sale.

Did you ever hear of anybody who didn't like a GOOD CUP OF COFFEE? You never did hear of such a person! But how many people CAN MAKE a good cup of coffee? Can you? Can your wife? Your landlady? Making GOOD coffee is an art, BUT

Rich's Patented Coffee Pot

Makes the most excellent coffee instantaneosly

I NEED MONEY

to place this coffee pot before the people who wish the Best.

Step into the "Emporium" in San Francisco, wulk down the center aisle until you strike the fountain and get a practical demonstration of what MY coffee pot does for coffee drinkers.

This pot will sell like wild-fire once upon the market. Every fountain which keeps open in winter will want it: Every householder will buy it. Address:

A. L. RICH

Charge of Fountain, Emporium

San Francisco - - - - - California

SOUTHERN PACIFIC 'FESSES UP—NEVER OWNED THE OIL—"DID NOT GET AND DOES NOT SELL THE OIL IN LAND GRANTED BY THE UNITED STATES GOVERNMENT."

Greatest "Bluff" in History of Great Bluffs, Is "Called."

The Southern Pacific Railroad Company has virtually confessed its non-ownership of the oil rights of lands granted to it by the United States Government: Following we give *verbatim* the most important dispatch concerning the rights of the S. P. company to oils in Government lands that has ever appeared. It is the most important because it is absolutely correct, having largely been taken from court records and agreements entered into between the Railroad Company and certain individuals; and because, too, it settles absolutely the question as to *who owns the oil in the lands* which the Government of this country granted to the railroad as "other than mineral bearing." The dispatch follows:

Each patent issued the Southern Pacific to lands lying in or near the oil fields of this State has contained a reservation clause by virtue of which the government retains all minerals in the ground exclusive of coal and iron.

The patent signed by Grover Cleveland under date of December 1st, 1894, contains the following clause:

"Now Know Ye, that the United States of America, in consideration of the premises and pursuant to the said Acts of Congress have given and granted and by these presents do give and grant unto said Southern Pacific Railroad Company, of California, and to its successors and assigns, the tracts of land selected as aforesaid and described in the foregoing, **yet excluding and excepting all mineral lands should any be found in the tracts aforesaid,** but this exclusion and exception according to the terms of the statute shall not be construed to include coal and iron lands."

Exception Is Made.

The patent recently signed by William H. Taft for Inyo, Kern and San Bernardino county lands contains no reservation in the grant itself, but the deed in the preliminary paragraph recites the act of Congress under which patent is issued, which in part is as follows:

"Every alternate section of public land, **not mineral,** designated by odd numbers to the amount of ten miles on each side of said railroad, not sold, reserved, granted, or otherwise appropriated by the United States and free from pre-emption or other claims or rights at the time the line of said railroad is definitely fixed, etc."

The President, of course, being an executive officer, is limited in the scope of his actions by the limitation of the statute by virtue of which he acts. He can neither enlarge nor diminish by his order the force and effect of the laws which he carries into execution, laws relating to land grants to railroads not excepted.

S. P. Confession.

Furthermore, by its own utterances the Southern Pacific acknowledges that it does not own the oil rights to the land it has received under the United States grant.

Following is an excerpt from an agreement to sell a certain piece of land located in the heart of the Kern River field, a typical instance:

"The party of the first part agrees that upon the punctual payment of the purchase money, interest and all the sums herein to be paid, and the strict performance of all the agreements herein made, and the surrender of this agreement, it will thereafter within thirty days from demand, cause to be made and executed to the party of the second part, his heirs or assigns, a deed of conveyance granting to the party of the second part, his heirs and assigns, the land hereinafter described, **reserving all claim of the United States to the said land as mineral land."**

In the Deed, Too.

The contract of which the foregoing is a part was carried out by the purchasers of the land and they received a deed which contained a clause, reading in part:

"All of fractional section ——, containing —— acres, according to the United States surveys, together with the privileges and appurtenances thereunto appertaining and belonging, excepting and reserving all liability on the part of the Southern Pacific railroad for taxes and assessments thereon since——, the said purchaser having agreed with said company to pay the same. * * * **Also reserving all claim of the United States to said tract * * * as mineral lands."**

Thus the Southern Pacific is convicted out of its own mouth of non-ownership of the oil contained in the land it now professes to have perfect title to.

RETURNS AFTER EASTERN VISIT.

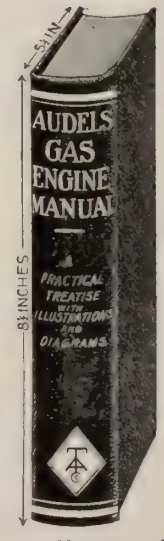
Chas. M. Wood of Wood & Huddart, well known San Francisco machinery merchants, returned on December 1 from a trip to New York and other Eastern points. Mr. Wood says that business is bettering all the time.

FUEL OIL TO BE PUT UP IN BRIQUETTES.

A dispatch appeared recently in a London, England, paper that a Roumanian has invented a method of solidifying oil which works succesfully in practice as a fuel. If this is so there is undoubtedly destined to be a tremendous growth in the use of petroleum the world over, as it will supplant coal and wood almost everywhere. We doubt the report.

In our advertising columns see the advertisement of the R. Kelly Machinery Co. of Los Angeles, which is one of the largest and best known dealers in second-hand machinery in the Southwest, having been in the business for twelve years. They now enjoy a very large trade extending over several of the states and into old Mexico; they have a reputation for reliability.

Gas Engine Manual



This volume just published gives the latest and most helpful information respecting the construction, care and management of **Gas, Gasoline** and **Oil Engines, Marine Motors** and **Automobile Engines,** including chapters on Producer Gas Plants and the Alcohol Motor.

The book is a practical educator from cover to cover and is worth many times the price to any one using a gas engine of any type or size. Contains 512 pages, 27 chapters, 156 diagrams, size 5½x8½ inches, weighs 2 pounds, handsomely bound, and in every way a fine volume.

SPECIAL OFFER

The only way the practical merit of this Manual can be given is by an examination of the book itself, which we will submit to the readers of the Derrick, free for examination, to be paid for or returned, after looking it over.

Upon receipt of the following agreement (which can be either cut out or copied), the book will be immediately forwarded.

No money in advance required, sign and return

CALIFORNIA DERRICK, Pacific Bldg., San Francisco:
Kindly mail me copy of "Audel's Gas Engine Manual" and, if found satisfactory, will immediately remit you $2.00, or return the book to you.

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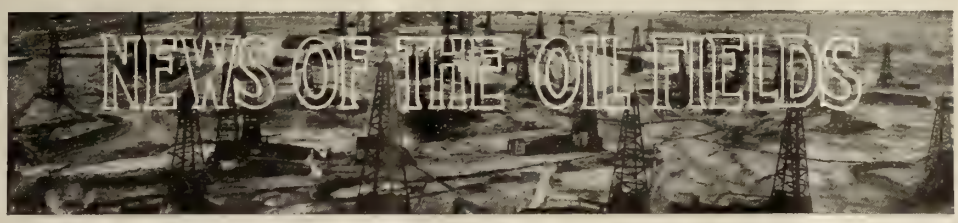
ADDRESS.....



COALINGA---By Guy H. Salisbury,

California's Best Known Oil Correspondent.

Partial Review of Year.

The year just drawing to a close has been a memorable one for this field. The most important move effecting the field in general was the signing of the Agency-Union-Associated contract; it removed the suspicion of an oil price war; it has suggested better conditions for the future; it has developed leaders in the oil industry; it has been plainly shown to the commercial world that the Independent Oil Producers of California have within their ranks men competent to handle the oil men's interest in a fight against combinations; it has developed a confidence in men rarely met with in this day of commercial strife. The effect of all of these points gained, is felt today in the industry. We, of this field, felt, during the short shut down of the Producers' pipe line, that we were taking the heaviest end of the then conditions; a shortage in transportation, a momentary surplus—but conditions were such that it was unavoidable; oil is now moving very nicely from the field. From November 11th to the 30th the Producers' Transportation Company ran 214,000 barrels of oil to the Coast, and the amount now passing through the pipe line is 28,000 barrels per day. With this movement on the part of the producers, and the oil now being run by the Associated, the new year will find all surplus storage and sump oil out of the field.

There is yet some anxiety among the operators on government land as to the remedial legislation of this winter at Washington, D. C. The visit of Judge Pierce, of the Department of the Interior, and Dr. Otis Smith, of the Geological Survey, who have been over the oil fields and have taken evidence of conditions at first hand on the ground affected, from the men most interested in the great question, "the treatment of the locator who in good faith, having followed the 'custom' as laid down by the rulings of the Department of the Interior, and the decisions of the State Courts, and those of the United States Supreme Court, for over 20 years last past, who have with faith in this 'law of custom' so strongly established, and who have gone forward with the development work, as to the treatment they shall receive at the hands of Congress." They hope for remedial legislation at this short session of Congress, as with many operators this will mean prosperity or financial ruin.

Broadening of Field.

This field has been broadened by the strike of the Coalinga Mohawk, section 12, 20-15, made last March, and also, by the strike of the Pulvarado, on section 2, 21-16, just reported. The south field has been extended by the Bohemian strike on section 22, 21-15, of light oil, of an asphalt base, 37 degrees B. Oil has been struck along the Coalinga Anticline through the Kettleman Hills; as to the quantity of production we do not know at this hour, the wells not having been finished, but the oil does exist there—of that point there is no room for doubt.

The Future's Promise.

The conditions about Coalinga, and the field, are very promising for 1911. The stability of our town and the field is now an established fact. We can justly claim the field to be 18 miles in length, taking the swing along the producing properties; on the north from the Continental Petroleum, section 2, 19-15, to the Bohemian on the south, section 22, 21-15, and 11 miles in width, from the Marion on the west, section 6, 21-15, to the Pulvarado on the east, section 2, 21-16. The south field has much promise for the new year, the market conditions improving, transportation being relieved by the new contract of 1910, all makes the year 1911, and those to follow, look very bright for Coalinga.

The Pulvadaro's Strike.

The strike on the Pulvarado Oil Company, section 2, 21-16, is one of importance. At this writing the amount that the well is capable of producing has not been determined. The property is not included within the oil measures as determined by the United States Geological Survey, and the depth is much shallower than was thought the oil would be reached. At 1,100 feet, with a rotary rig, the company had 50 feet of sand that made a good showing of oil, and the manager was of the opinion that the pay sand would be entered at about 1,400 feet from the present showing. The formation has shown much the same as that on the Mohawk, only it is about 1,000 feet shallower than the latter company. There is a strong gas pressure coming with this sand; the well is being cased to shut off the water. This week will determine the value of this first sand.

Coalinga Unity Levies Assessment.

The Coalinga Unity Oil Company, section 12, 20-14, have levied a 10-cent assessment; the money will be used in a third payment on the land and in bringing the property to a first class condition. It is the purpose of the company to raise $30,000 with which the contemplated improvements and the land payment will be made. Well No. 2, the great gas well that burned down the derrick and rig last year, is to have a new standard rig built at once and the well finished up. The other wells will be cleaned out and put back to production. The property was shut down for about two months on account of the shut down of the pipe line, while oil was being run from Midway.

K. T. & O. Will Use Motor for Drilling.

The Kern Trading and Oil Company, on section 31, 20-15, have perforated the pipe in well No. 67. She is now on the beam making a nice production. This well is one location west from well No. 65, the big well that is making 2,000 barrels per day. The derrick and rig for well No. 63 have been completed and are now ready for the electric motor that is to drill in this well. The motor will take the well from grass roots down. The electric company have equipped this motor

so that the driller is enabled to increase the speed at will, as when it is necessary to run out in a hurry to get away from heaving sand the driller can do so. The well is about one mile from the postoffice and will be watched by operators, as it is claimed that with an electric motor the expense is much reduced on a well.

American Petroleum's Big Wells.

The American Petroleum Company drilled in well No. 7 one year ago; the well has made 190,000 barrels during that time, but recently began to fail in her production. Tom Crumpton redrilled the well into a second sand, completing the well at 2,200 feet. The well is now on the beam making 2,000 barrels per day. Old well No. 9, the well that made 12,000 barrels per day at one time shortly after she came in, is now making 900 barrels per day. The company have completed three wells on section 6, 20-15, and are ready to start drilling on two more wells on this section. On section 32, 19-15, two new wells are drilling. On section 18, 20-15, two wells are being finished up, and one more well will be finished this month.

Bohemian Ships One Barrel!

The Bohemian Oil Company, section 22, 21-15, tubed well No. 1 to 1,700 feet from bottom, the tubing was pulled last week and replaced at a greater depth; the well is now on the beam, and a few days will determine the amount of oil which it will produce. Last week the first oil was shipped from the south field; one barrel was consigned to the Standard Oil Company, Point Richmond, California. This oil is presumed to have been shipped at the request of the consignee, to determine the value of the oil as a refining oil. The oil has been determined as an asphalt base, 37 deg. B.

Pluto Had a Pinched Shoe.

The Pluto Oil Company, section 19, 25-19, had a pinched shoe; it was necessary to pull the casing to replace the shoe, which having been done the water will be shut off at about 2,200 feet, this week. The showing made by the well is very encouraging and the appearance of an oil sand indication has stimulated the operators to renewed activity in that section of the Devil's Den field.

British Consolidated Doing Well.

The British Consolidated Oil Corporation, Limited, section 26, 19-15 (old Monarch property) have redrilled well No. 1. The well is now making 350 barrels per day of 21.5 gravity oil; well No. 2 is 2,580 feet deep with heavy 6¼-inch casing, and about 10 feet into the shell overlying the oil sand.

Castle Oil Company.

The Castle Oil Company, section 4, 20-15, well No. 1, is 2,980 feet deep with 8¼-inch casing; the 10-inch was landed at 2,602 feet; formation, barnacle and oyster shells. This is about the same formation that was entered in the Empire well on section 32, 19-15.

Boychester Will Cement Off Water.

The Boychester Oil Company, section 18, 21-15, well No. 1, is 2,765 feet deep. Having passed the damaged pipe, will soon be able to again cement off the water. Formation now indicates that in about 150 feet the bit will enter the pay sand, as the formation in the DeLuxe well is very similar.

Vancouver-Coalinga Fitting Up.

The Vancouver-Coalinga Oil Company, section 14, 20-15, have completed a 110-foot derrick for the combination rotary standard rig; two 70-horse power boilers have been set up and bricked in; bunk-houses are completed; development work will soon be started.

Coalinga-Kettleman in First Sand.

The Coalinga-Kettleman Oil Company, section 2, 22-17, are over 2,200 feet deep with well No. 1 with 10-inch casing. Reports from the hills state that the well is in the first oil sand, that within 300 feet the pay sand will be entered.

American Petroelum's Lost Hills Operations.

The American Petroleum Company have completed a standard rig on section 36, 25-20 (Lost Hills), and are rigged up ready to go 3,000 feet should it be necessary."

"Daugherty Well" Is Showing.

The "Daugherty Well," drilling on the Lacey Oil Company's land, section 34, 25-18, is 970 feet deep with 10-inch casing; formation, sand rock and shells. Considerable gas is coming in with the shell rock.

Premier's New Producer a Good One.

It was reported on November 23 that the Premier had just completed its fifteenth well on the south line of the 160 acres in section 24, 20-14. The well has been averaging with the others, being good for about 200 barrels per day, according to those who have seen it. The company is now estimated to have a production of more than 65,000 barrels per month. It is one of the properties to be incorporated in the merger forming the California Consolidated Oil Company, of which Rear Admiral R. D. Evans, U. S. N., retired, is president. Col. Timothy Spellacy is president of the Premier. Prospects are for an early resumption of the monthly dividend paid by the company before the congestion of oil transportation lines caused them to discontinue same temporarily.

REPORTED LAND SALES

It is reported that J. J. Mack, the well known San Francisco capitalist, has paid down $50,000 earnest money on the purchase of the property of the Pinal Oil Company. It is further stated that English capital is behind the deal; English capital is always to blame when nobody else can be determined on.

VISALIA MIDWAY SELLS.

The Visalia Midway has sold the south half of the southwest quarter of section 25, 31-22, to San Francisco capitalists connected with the Crockers. The price paid is reported to be $2500 per acre. The land is to be developed.

615 ACRES REPORTED SOLD IN EAST SAN EMIDIO.

P. J. O'Brien of Bakersfield is reported to have purchased 615 acres of land in East San Emidio, as an investment, not for immediate development, from Messrs. Sartiat Brothers of Bakersfield. H. R. Johnson, formerly with the United States Geological Survey, made a most favorable report on the property, which determined the sale. The land is patented. It lies close to the Midway Union and the Wheeler-Bancroft holdings. Official description is: the greater part of section 36, 11-20, S. B. B. & M.

TEXAS OIL.

The following table gives the yearly production and value of Texas petroleum since the year 1889 to 1908, inclusive:

Year.	Barrels.	Dollars.
1889	48	340
1890	54	227
1891	54	227
1892	45	225
1893	50	210
1894	60	420
1895	50	350
1896	1,450	4,000
1897	65,975	85,975
1898	546,070	382,249
1899	669,013	473,443
1900	836,039	871,996
1901	4,393,658	1,247,351
1902	18,083,658	3,998,097
1903	17,955,572	7,517,479
1904	22,241,413	8,156,220
1905	28,136,189	7,552,262
1906	12,567,897	6,565,578
1907	12,322,696	10,410,865
1908	11,206,464	6,700,708
Total	129,026,455	$53,948,222

VENTURA NOTES

VENTURA DEVELOPMENT COMPANY.

An excerpt from a letter of Field Manager W. C. Daniel, under date of December 9th, says:

"No. 3 looks very good. We have passed through two small streaks of oil sand, one about eight feet thick and one six feet. The pumpings show considerable oil and some gas. I think the formation has flattened out and would not be surprised if we continue to enter small streaks of sand and shale until the main sand is found.

"I visited the Slocum property just over the hill from No. 3. This well is now 800 feet deep and I think it is good for at least 50 barrels now. I saw a test of the oil made, showing it to be about 26 gravity."

RAMONA HOME DOING WELL.

The Ramona Home Oil Company, mentioned in our October number, is doing well. A standard rig and six inch casing are being used, and good progress is being made. The company expects to finish the well at 1500 feet and look for an 100 barrel producer.

UNION AGAIN OPERATING IN LITTLE SESPE.

The Union is now working about twenty men in Four Forks and Tar Creek (so vividly described by H. J. Jory some time since in this magazine) building roads preparatory to cleaning out the old wells and drilling new ones. The Union was very active here some years ago but abandoned it to a large extent because they were almost entirely in control of the district. Many of the old wells have been pumping steadily for a number of years with hardly any attention, as mentioned by Mr. Jory in his series.

SANTA MARIA

PALMER PUMPING TO START BIG WELL FLOWING.

Palmer's big Cat Canyon well, No. 2, on the Blochman property, has been placed on the pump in an effort to clean out the hole and start the old flow again. The well was formerly good for 7,500 barrels per day. It is now producing about 400 barrels. No. 3, on this same property, is said to be flowing 500 barrels daily. No. 4 is on the pump and No. 5 is down about 1900 feet. The company will shortly announce the purchase of 900 acres additional territory in Cat Canyon.

PALMER JUNIOR.

Palmer Junior is drilling No. 2, on the Blochman property, and has the well down some 1050 feet. No 1 has been cemented off at a depth of 2600 feet. Formation, shale.

CAT CANYON DOING FINELY.

Word has just come to us that the Cat Canyon Oil Company, operating on the McCroskey tract, about two miles north of the Brooks property in Cat Canyon, is down 500 feet with its stovepipe casing. This well is an experiment in this section of the field and the advent of a producer would prove up over a mile of intervening territory.

The Cat Canyon is being financed by Messrs. Hopkins-Maltman Company of San Francisco, and its success means considerable to a great number of their friends.

The Ideal Company are putting down their well on the Tunnell lease.

BROOKS BUYS HALF INTEREST IN REFINERY.

Word comes from Edna that the Brooks Oil Company has purchased a half interest in the Smith Refinery Company there, and that regular transport service will be run over the Pacific Coast tracks from the loading station at Sisquoc. It is also announced that the survey from the Brooks lease to the Sisquoc station, for a pipe line, has been completed, and that a beginning in laying the line will be made at once. It is also stated that the Brooks company has received an abundance of orders for asphalt, for which their oil is particularly suited.

LOS ALAMOS.

The Los Alamos Petroleum Company has had trouble with its well again. "Heaving sands," combined with a big gas pressure, is said to cause the trouble.

PRINCESS DOWN 600 FEET.

The Princess, in the Tepusquet, is down considerably beyond 600 feet at present and is in blue shale.

NEW PENN'S NUMBER FIVE NEARLY COMPLETED.

Well No. 5 of the New Pennsylvania has been deepened more than 100 feet and is now ready to complete and put on the beam. When it is producing it will make five good producers on the property.

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IRON TANKS, for oil and air
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Views in Whittier and Olinda Oilfields.

Scene in the Whittier, Los Angeles County Oilfield. While Whittier and other Southern Oilfields are not as much in the public eye as the San Joaquin Valley fields, they nevertheless continue a good production. The Murphy, Amalgamated, Whittier, Union and other well known campanies are the chief operators here.

The Oilinda, Orange County Oilfield, is really a continuation of the Whittier field.

STATE MINING BUREAU ISSUES EXCELLENT MAP OF WHITTIER-OLINDA

Under the direction of State Mineralogist, Lewis E. Aubury, a map of the Whittier-Olinda oilfields has been published. The map is an excellent one and we should have published it but for the fact that it would not reduce to the proper dimensions for publication in this magazine. The map was drawn by Paul W. Prutzman. Upon it are indicated the producing wells, the drilling wells, the abandoned wells, the wagon roads, the railroads, the pipe-lines, the gravity of oils produced and other particulars that are necessary to convey the fullest and most accurate information regarding the field. This thoroughness characterizes the entire bulletin concerning the oil fieles that has been in preparation for some months and that will be, when it is issued, the most comrehensive handbook on California petroleum and California petroleum fields that has been published.

The Whittier-Olinda map is on sale at the California State Mining Bureau. The price is 40 cents, with 4 cents postage added.

MOVING 40,000 BARRELS OF OIL PER DAY.

The Agency is now moving 40,000 barrels of oil every day, through Producers' and Associated pipe lines, most of which is Lakeview oil, while some oil is being taken from the American Oilfields, Santa Fe, and several other producers. McKittrick oil is being transferred to Associated Storage reservoirs in Kern River, which are shared by Agency members in that field.

American Midway Oil Company.

The American Midway, which has 400 acres of land in all, is planning an active campaign of development. Their lands consist for the most part in 160 acres in the Elk Hills, on each quarter of which they erected rigs preparatory to drilling; 160 acres in the Buena Vista Hills, which likewise has four rigs erected already, and one well down 2300 feet, having encountered a strong gas pressure, and 80 acres in Midway, about a mile from the Lakeview gusher and an equal distance from the Standard's big wells, this property being almost in a direct line between these big producers. They have well No. 1 down 1200 feet on the Midway 80, which, by the way, is leased from the Monte Cristo people, on section 3. Mr. Harry Becker, the very well known superintendent, formerly with the Union Oil Company, and in charge of the Lakeview gusher at the time the big well came in, is in charge of the American Midway's property. He has expressed a very hopeful outlook for the well.

AMERICAN OILFIELDS COMPANY MAKES PURCHASE.

E. L. Doheney has sold the American Oilfields, of which company he is president, the west ½ of section 34, 26-21, in the Lost Hills, on which two wells are being drilled with portable rigs. American Oilfields wells are holding up their production well. While speaking of the American Oilfields, which is a Doheney creation, it is as well to state that the other Doheney companies, the Mexican Petroleum Company of Delaware, the Mexican Petroleum Company of California, and the Huasteca Petroleum Company are doing so well that the Huasteca has declared a dividend of 4 per cent yearly on the common stock, the first quarterly installment to be paid in January. The relation of these latter companies to each other is very intimate, the Mexican Petroleum Company of Delaware owning 95 per cent of the Mexican Petroleum Company of California and all of the Huasteca Oil Company. That Waters-Pierce contract, mentioned in our last issue, came in at the right time.

LADY WASHINGTON CLOSE TO BIG SANDS.

Well No. 1 of the Lady Washington Oil Company, located on section 6, in Sunset, is now down 226 feet, the last 100 feet having been made during the last ten days or so; fast time. Prophecies have been freely made by those who consider themselves posted on this part of Sunset that the main sand would be struck at a depth of about 2300 feet, and developments are therefore being watched with much interest at the present time. Two weeks more may spell success in very large letters. Whatever happens, unless a rush of oil forces up the drilling tools, the well will be put down another 200 feet, according to a recent dispatch. Mr. F. V. Gordon, one of the earliest men to work in the West Side oil fields, and one of the most successful men to interest himself, said recently to the editor that all the region about the Lady Washington would undoubtedly prove itself very valuable, and he further stated that in his opinion the Lady Washington would get a good producer. Work is proceeding on the Essex, adjoining the Lady Washington and Yellowstone, with every chance of success, a strike having been reported at a depth of a little over 2000 feet. Drilling is being carried forward with a rotary and good speed is being made.

MT. DIABLO INCREASES DIVIDENDS ONE-THIRD.

The Mt. Diablo Oil Company has made a big increase in its dividend rate and on December 1 paid 3 cents per share, a total of $15,000, to its stockholders, all of which comes from the royalties received from the leases on its land, which consists of the entire section 26, 32-23, in Midway. The Mt. Diablo is now paying 36 per cent per share per year. It has been announced that the option given to representatives of an English syndicate for the purchase of the property several months ago, at a price of $1,500,000, which has been several times extended, has for a third time been extended, for a period of ninety days, at the same price. The amount originally paid down for the company, $10,000, was forfeited, and will not apply on the sale in case the prospective purchasers decide to invest. The Mascot Oil Company, recently sold to Admiral Evans, produces the greater part of the Mt. Diablo's revenue.

JANUARY OIL COMPANY DELIVERS.

The January Oil Company, located upon the N. W. ¼ of the S. W. ¼ of section 26, 32-23, is delivering 3,600 barrels of oil to the Agency per week. The January is on the Mt. Diablo's property.

J. M. S., ALSO MT. DIABLO LEASE, DOING WELL.

The J. M. S. Oil Company, operating a 40-acre lease from the Mt. Diablo, has finished well No. 3 and has it on the pump. Its other wells are in good conditions. In November the J. M. S. shipped 7,800 barrels of oil. It is stated that the directors intend drilling 12 more wells on the lease, for the purpose of which development they are offering a small block of stock to local investors.

WHY CONSOLIDATED MIDWAY STOPPED—FURTHER CONS. MATTERS.

The stopping of the flow of the big Consolidated Midway well in Sunset, not far from the Lakeview gusher, is given by the "Midway Driller" as being the collapse of the 10-inch casing. The "Driller" says that the 10-inch casing has been cemented off and an 8-inch is being placed in. President M. J. Monnette of the company recently made a report of the property, saying in effect that he and his associates had examined the conduct of the company's business in the field and that the examination showed the necessity for a number of reforms which have already been instituted. H. G. Evans, formerly in the employ of the Standard Oil Company, which seems to constitute a recommendation of sufficient size for praise with the oil company officials, has been made field superintendent, and Harry Moore has been made assistant field superintendent of the company's property. The president further stated that every hope was entertained that the company's wonderful gusher would soon again be producing at its old rate. The company's well on section 32 was showing a strong gas pressure at last reports and the well on section 15 is just above the big oil sand, being 2,200 feet down.

WATER WELL PAYS "BIG."

On the N. E. ¼ of section 12, 11-24, there is situated a very unusual well. It is the property of the Northern Water Company and for a while it was shooting a stream of water almost to the top of the derrick, although it is under control at the present time. The new well is known as No. 2 and is capable of producing between 15,000 and 20,000 barrels of water per day. Furnishing water to drilling companies in the field at popular oilfield prices is a lucrative business and there is no doubt at all but that the company will be able to pay dividends.

UNION'S SAGE NO. 9 SPOUTS.

It was announced on December 1st that the Union Oil Company's well on the Sage lease, section 35, 12-24, Maricopa, which is located only 400 feet from the Lakeview gusher, had struck a terrific flow of oil at a depth of 2160 feet, and that it was believed the Lakeview sand had been entered. The production could not be gauged, according to the reports; nothing further has as yet been learned of the well, except that it sanded by its own fury. While the Sage well was flowing the well of the Maricopa 36, not far from the Lakeview, opposite from the Sage well, also spouted a considerable amount. A tremendous gas pressure underlies this entire territory. Neither of the wells affected the flow of the greatest well ever known—the Lakeview, which is still putting out 12,000 barrels per day and over. Two splendid reservoirs have been constructed back of the gusher in the hills to hold its production. They were made by the damming up of a small canyon. One of them will hold about 3,000,000 barrels, it is estimated; the other will contain not more than half that amount. It is doubtful if either will ever be filled, although the smaller is now holding a very great amount of oil.

ESPERANZA WELLS—FROM MIDWAY DRILLER.

The "Midway Driller," which is reliable, says that the well No. 5 of the Sibyl Oil Company, an Esperanza property, will be finished in a few days. Well No. 7 is down 1325 feet and No. 8 1000 feet. No. 35 on the Scrongo is forty feet in the sand at 1150 feet and will be finished soon. The Nevada Midway No. 4 well was finished at 1193 feet in eleven days. The water was shut off with the 10-inch casing at 973 feet. The 12½-inch was then saved, the 486-foot string being pulled.

MIDWAY PREMIER'S WONDERFUL WELL.

The first well of the Midway Premier Oil Company to come in on their property on section 5, 32-23, North Midway, came in with such a thunderous rush and force that all hands working on it were put to flight for safety. A second Lakeview gusher seemed to have been struck, the well producing for the first few days anywhere from 40,000 to 50,000 barrels of oil per day, and at the present time it is producing much more than 5,000 barrels, although a month has elapsed since the well thundered into existence. Had this well been obtained a year ago it would have awakened the echoes around the petroleum world, but today the comment has already subsided except for occasional remarks about the good luck of the company. The gravity of the oil tests 24.7, flowing from the well at 52 degrees temperature, making it a most desirable oil for the Standard's refinery. As the company was caught short of storage the Standard officials were kind enough to carry their product away at a low rate, contracting for about 300,000 barrels, according to press dispatches. This is said to have been charity on the part of the Standard, but if so, it was a most satisfactory charity to the big company. Up until the first of this month deliveries were made at the rate of 20,000 barrels per day. Fifty cents is said to be the price at which the oil is being sold, although it is also said that 60 cents has been bid for it. There is a rumor that the company will join the Agency; this has not yet been confirmed. There is also another rumor that the company will pay an ante-Christmas dividend; welcome rumor to the stockholders. Colonel Timothy Spellacy's good fortune and judgment are still with him to the utmost, as he is not only a heavy stockholder but is also a director of the company. The company is preparing to start three strings of tools, drilling two wells on the north line, Nos. 2 and 3, to offset the Santa Fe and K. T. & O., and one near the center of the east line, No. 10, to offset No. 2 of the Midway Five Oil Company.

MIDWAY FIVE OIL COMPANY.

The Midway Five, adjoining the recently sensational Midway Premier, is still filling its contract with the Standard Oil Company to supply that company with 100,000 barrels of oil. The company, it is announced, has been offered 45 cents per barrel for the entire product of the well for a period of from one to two years, on a basis of supplying oil of 20 gravity or higher, but the sale was not made by the company, for reasons best known to the directors. When the Midway Premier was flowing its wildest and using the sumpage of the Midway Five, the latter well was not stirred up from its lethargic sanded condition, the owners being pleased not to lose the oil, or to have the Midway Premier Company lose any more of their oil than was necessary.

UNITED OIL COMPANY BEARS INSPECTION IN MOST SATISFACTORY MANNER.

A number of the stockholders of the United Oil Company spent the last Saturday and Sunday in November at the company's camp on section 24, electing directors and incidentally seeing a 2,000-barrel well on the company's section 6 property perform. The well is No. 7 and makes seven producing wells on that particular property, with a production which amounted to more than 3,500 barrels when seen. As the company is delivering its product to the Standard at 65 cents, it is easily seen that this group of wells is making a nice piece of money.

The United, under the skillful guidance of C. F. Whittier, president and manager; E. D. Morrison and F. L. Blumer, vice-presidents; C. P. Campbell, treasurer, and J. B. Hedrick, secretary, has made wonderful strides during the past year and these officials and A. F. Andres and J. S. Wallace, all of Los Angeles, were again elected directors of the company and given a vote of appreciation and thanks for their efforts. The United, from a company with a royalty lease on 120 acres, has advanced until it now owns more than 1,000 acres of oil land and on December 10 paid its seventh dividend of 1 per cent per month.

HONOLULU'S "GASSER" BIGGEST EVER OBTAINED IN CALIFORNIA.

By actual measurement the Honolulu Consolidated Oil Company's huge gas well on section 6, 32-24, Buena Vista Hills, Midway region, is flowing between 48,000,000 and 51,000,000 cubic feet per day, being of the same size, if not a little larger than the phenomenal gasser of the Standard Oil Company which has been sold to the California Natural Gas Company and which from now on will supply the city of Bakersfield with cheap fuel and light, as told in another column. Superintendent J. A. Pollard, of the Honolulu, who has put up such a stiff fight against jumpers, who was stabbed by his drunken chauffeur, and who is generally known because of his grit and capability, now has the gas gusher almost under control. As yet it has not been decided whether or not the well shall be allowed to remain a gas well, selling its product, or whether the gas shall be shut off and the drilling for oil continued. A remarkable expedient for shutting off the gas has been resorted to by Mr. Pollard, he having joined all the casing in the well securely and having enclosed the outer string with cement for a distance of about twenty feet from the surface of the ground. A pit eight feet square was dug around the well, filled with cement and chained to the iron with a clamp, the weight of the cement being depended upon to hold the casing down when the valves restraining the pressure are fixed.

BRAD OIL COMPANY'S WELL IN EXCELLENT CONDITION.

The Brad Oil Company, on section 15, 32-23, has its well in excellent condition. The tubing has been lowered, and the discharge pipe has been reduced to three-quarter inch, through which 400 barrels flow steadily every day. The Producers' Transportation Company laid a line to the well very recently to handle the output.

M. J. OIL COMPANY HAS GOOD WELL.

The M. J. Oil Company, located about a half mile east of the Lakeview gusher, at Maricopa, has a splendid well of light gravity oil, which is said to test about 28 Baume. The well is under control, and while it escaped recently for an hour, it flowed by actual measurement in a tank no less than 5,000 barrels, so one may judge its size. The company receives 50 cents per barrel from the Standard Oil Company, according to all reports, and has a contract with the Standard to deliver 250,000 barrels.

TEMPLOR RANCH OIL COMPANY.

Templor Ranch has disposed of 10,000 barrels of oil to the Agency. H. B. Guthrey, who was in San Francisco about three weeks ago, foresaw that Templor Ranch would soon be able to make a shipment of its oil and predicted a raise in the company's stock. Both these things having come to pass, Mr. Guthrey may successfully pose as a first class prognosticator. The Agency is now taking oil from the Dillon Oil Company, leasing in the same district. Templor is waking up.

MORE STORAGE NEEDED.

Well No. 2 of the Templor-McKittrick Oil Company in Sunset has been steadily flowing for several weeks. Further storage will have to be provided to take care of the product.

Negotiations are going forward for the sale of the product to a local consumer at a price much in advance of that obtained for the ordinary product, as it is of an exceptionally good quality for road purposes and for asphalt refining.

LOS ANGELES QUOTATIONS.

(Not Quoted on San Francisco Stock Exchange)

	Bid.	Asked.
American Crude Oil	.....	60
Central Oil	1 81	....
Cleveland Oil	8 00M	8 00M
Continental	.....	35
Fullerton Oil	.....	5 00
Mexican Pet. Ltd. (pfd)	68 00	72 00
Mexican Pet. Ltd. (com)	36 37½	37 00
Olinda Land	.....	56
Perseus	.....	20
Pirn Oil and Land Co.	20	....
Section Six Oil	.....	50
Union Provident	97 75	98 25

LATEST QUOTATIONS ON SAN FRANCISCO AND LOS ANGELES STOCK EXCHANGES AND DIVIDENDS FOR MONTH ENDING NOVEMBER 30, 1910.

Following are given the latest price quotations, bid and asked, upon the stock exchanges of both San Francisco and Los Angeles, of all listed stocks excepting those which have not been exchanging hands recently. The number of dividends paid, the date, amount per share, and total disbursement to date of every listed company in California (when such disbursements have been made public) follow on the same line:

	Closed.		Dividends.			
Company.	Bid.	Asked.	No.	Date.	Amt. pr. Share.	Total to Date.
Alma Oil Co	.....	1 00	16	7 15 10	03	182,400
Amalgamated Oil Co	25 00	27 75	32	9 15 10	1 00	1,600,000
American Petroleum (pfd.)	.....	93 00	17	11 1 10	66	296,996.75
American Petroleum (com.)	55 50	57 00	17	11 1 10	66	1,635,990.80
Amy	80	.....	..	.....	....	.....
Apollo	07	10	2	3 20 05	01	4,000
Associated Oil Stock	44 50	45 00	4	3 1 07	1 50	1,548,368.54
Associated Oil Bonds, 5s	94 00	.....	..	.....	....	.....
Bay City	50	.....	8	10 15 10	10	155,000
Blue Mono	.....	08	..	.....	....	.....
Brookshire	1 30	1 32½	45	1 1 10	01	442,500
California Midway	.....	63	..	.....	....	.....
California Oil & Gas	.....	75	..	.....	....	.....
California Seaboard Oil Co	.....	25	..	.....	....	.....
Caribou Oil & Mining Co	1 40	1 45	67	11 15 10	02½	861,937.74
Claremont	1 25	1 40	66	11 28 10	02	405,000
Coalinga Central	.....	40	..	.....	....	.....
Coalinga Mohawk	1 30	1 40	..	.....	....	.....
Coalinga National	15	16	..	.....	....	.....
Coalinga Pacific	.....	.....	18	12 23 09	10	107,250
Columbia	.....	.....	54&55	11 25 10	½&½	444,737.83
Cons. Midway	20	23	..	.....	....	.....
Cresceus	.....	.....	..	.....	....	.....
Dabney	.....	10	..	.....	....	.....
Del Rey	.....	20	5	9 1 10	½	19,637.50
De Luxe	1 20	.....	..	.....	....	.....
Dominion Oil Co	75	95	..	.....	....	.....
Empire	.....	2 75	6	10 30 10	01	12,000
Enos	70	.....	..	.....	....	.....
Esperanza	.....	.....	26	12 27 09	02	49,450
Euclid	.....	65	42	8 1 10	01	141,500
Four Oil	.....	14	68	2 25 10	01	213,000
Fulton	.....	1 25	..	.....	....	.....
Globe	10	14	22	10 1 10	01	93,000
Graciosa	.....	50	..	.....	....	.....
Gypsy	.....	45	4	8 4 10	07	40,000
Home	.....	.....	A25	11 20 10	02	490,000
Homestake	.....	.....	48	10 13 10	10	80,250
Illinois Crude	.....	35	40	6 1 10	01	94,000
Imperiol	.....	.....	71	7 18 10	8 00	4,000,000
Junction	23	39	8	6 1 09	01	20,000
Kern River	.....	8 00	48	11 1 10	10	116,000
Linda Vista	.....	.....	23	10 19 10	01	84,447

SECOND HAND PIPE AND CASING

DONT buy pipe until you get our prices. Carload or less, orders filled immediately.

PACIFIC PIPE COMPANY S. W. Cor. Main and Howard Sts., San Francisco, Cal.

Lucile	.....	8 50	16	12 20 09	10	42,727.04
Mascott	.....	3 00	10	11 20 10	04	80,000
Maricopa National	24	25	..	.....	....	.....
Maricopa 36	2 40	.....	..	.....	....	.....
McKittrick	15	20	..	.....	....	.....
Mecca	.....	.....	6	7 15 09	03	71,825
Monte Cristo	2 55	2 65	67	11 20 10	10	790,000
Mountain Girl	.....	.....	1	8 4 10	02	7,000
Mexican Petroleum	.....	.....	51	11 1 10	01 1-3	3,674,886.21
Nevada County	15	.....	3	10 13 08	04	40,000
Nevada Midway	16	18	..	.....	....	.....
New Penn. Petroleum	60	.....	6	11 15 10	01	30,000
Occidental	15	.....	..	.....	....	.....
Pacific States	.....	30	..	.....	....	.....
Palmer	1 47½	1 50	18	11 25 10	01	394,521.50
Paraffine	60	78	13	11 15 10	01	39,000
Peerless	.....	4 50	77	9 20 09	06	801,000
Piedmont	10	15	7	5 9 10	01	26,877.30
Pinal	5 25	7 00	63	11 30 10	10	1,006,827.50
Premier	75	79	4	7 20 10	01	40,000
Producers	.....	.....	2	9 22 10	50	120,000
Record	.....	5 00	17	11 15 10	07½	115,000
Republic	.....	50	..	.....	....	.....
Rice Ranch	.....	.....	22	10 10 10	03	117,000
Royalty	.....	.....	20	9 20 10	33 1-3	29,400
Sacramento	1 00	.....	..	.....	....	.....
S. F. & McKittrick	10 00	15 00	31	11 1 10	30	460,000
Sauer Dough	1 75	2 00	57	11 21 10	03	564,186
Section 23	24 50	30 00	8	8 26 10	25	60,000
Sesnon	8 00	.....	14	11 6 10	05	157,000
Shawmut	.....	50	..	.....	....	.....
Silver Tip	1 25	1 40	4	2 25 10	10	30,000
Sovereign	.....	.....	19	9 1 10	01	100,000
S. W. & B.	35	41	7	9 10 09	01	41,470
Sterling	2 00	2 25	23	3 15 10	12½	776,250
Sunset Monarch	.....	2 00	..	.....	....	.....
Superior	.....	15	12	7 26 10	01	62,500
Thirty-Three	.....	.....	60	8 6 10	4 00	1,090,000
Traders	75 00	90 00	17	5 15 10	1 00	209,146.50
Turner	1 00	1 25	..	.....	....	.....
United Petroleum	99 00	100 00	111	11 20 10	50	2,501,963.43
Union	99 75	100 00	172	11 20 10	50	7,366,799.16
United Oil	75	85	6	11 10 10	01	72,921.86
West Coast (com.)	.....	40 00	..	.....	....	.....
West Coast (pfd.)	.....	.....	6	9 1 10	2 00	124,896
West Shore	.....	.....	47	12 21 08	05	235,000
Wolverine	40	.....	..	.....	....	.....
W. K. Oil	2 00	2 25	..	.....	....	.....
Western Union	.....	80 00	..	8 21 07	2 00	484,951
Yelolwstone	.....	25	1	5 08	01	8,000
Storage Certificates	35	37	..	.....	....	.....
Total Dividends paid former listed companies since absorbed or sold						$ 1,963,736.12
Total Dividends Paid to Date						36,806,696.22
Total Dividends Paid by the Above Companies for November, 1910						549,672.69

Youngstown Sheet and Tube Co.

Youngstown, Ohio

Largest Independent Manufacturers in the World of Both Steel and Genuine Wrought Iron

California Special Casing

Drive Pipe

Tubing Line Pipe

Special Rotary Drill Pipe

All sizes, weights and kinds used in the California Oil Fields, Special attention given to heavier weights for deeper territory.

ALL SIZES INTERCHANGEABLE WITH OTHER STANDARD MAKES

The Great Valley of California, outlined by A. S. Cooper E. M.

This map is published through courtesy of State Mineralogist, Lewis E. Aubury. The crosses indicate gas wells. See "Natural Gas in The Great Valley of California," by A. S. Cooper.

CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 3 San Francisco, Cal., January, 1910 No. 8

1 9 1 0

A Remarkable Year in California's Oil History

By the time this issue of our magazine appears, approximate statistics, showing the production of all the oilfields in the State, will in all probability have been given the public by the various oil newspapers. It is not our purpose to give a hasty write-up of the year 1910, with a gusher sketch, a story of millions and the general accouterments of the ordinary purveyor of "news." For we believe that a careful review of the year is desired and think that by turning back the pages of the CALIFORNIA DERRICK, as it has appeared month by month, the proper proportions of the generally interesting events will be displayed, and the essential facts of each month can be shown to the best advantage.

A close analysis of the causes responsible for the great growth of our petroleum industry during the year just past leads inevitably to the conclusion that the huge demand for our product was the primary cause for the phenomenal development of the various oil districts of the State. This demand has been steadily growing and nothing could stay it. A lesser, but still a very important cause for the growth witnessed was the necessity upon the part of operators on Government property to comply with the conditions imposed upon them by the Government; upon property withdrawn from entry by the President on September 27th, 1909, and property affected by other withdrawals, and by the Yard Decision. Still another cause for the unprecedented development was the discovery of new oil districts and oil sands which have proven, we believe we may say, the richest in the State—the richest in the world. The rush consequent upon such discoveries and the work done upon property in the region was naturally proportionate to the value of the "find." Almost all of the work was legitimate, if we may use the term in this manner, but the great display made by the Lakeview gusher was used by promoters to fire the imagination of persons not ordinarily interested in oil, so that many new companies were started in the most unlikely places, sometimes to the great astonishment of old oil men, meeting with success.

The greatest and most lasting effect upon the business of producing petroleum in California came about through the alignment of the Agency and the Associated forces. This alignment has lent a stability and absolute reliability to the oil business which it has never before attained in California. At the present time there seems to be a most cheerful outlook for considerably higher prices at the well, with a diminishing accumulation of stocks monthly. The growth of the industry is everywhere acknowledged, and 1911, well started, can be looked forward to by the oil producer and business man with confidence. We are giving herewith all figures available, with the closest computations for the December production to show the grand total production of the year. Likewise, on another page we recall the events of the various months by the monthly review already mentioned. We consider that the past year has been the most remarkable year ever witnessed in the California oil business and trust that our endeavor to recall it in brief will meet with the approval of our readers.

Table Showing Approximate Production for Year, 1910, by Months.

Month.	Production by Barrels
January	5,182,889
February	4,469,650
March	5,529,900
April	6,355,000
May	6,995,825
June	7,126,544
July	7,207,890
August	7,368,320
September	6,858,028
October	6,552,281
November	6,323,189
December (estimated)	6,250,000
Approximate total for year 1910	76,219,506

The total amount paid in dividends during the year was $10,588,694.10.

Review of Main Petroleum Events of Year 1910, Month

(Note: *This review is of events only. Scientific articles and matter not mentioned therein.*)

Main Events shown in January, 1910 number of California Derrick

Secretary of Interior Ballinger restores 378,456 acres of petroleum-bearing land in California to entry by prospector. Oiling stations being considered by U. S. Navy. Daily oil production approximately equal to daily oil consumption. Large companies to develop oil lands formed, to-wit: Petroleum Investment Company (to aid in financing oil companies); American Oilfields, Ltd., to develop great tracts of Midway oil land holdings; Consolidated Midway Oil Company, to develop Midway holdings. Independents' contract with Associated Oil Company concluded with final deliveries about January 15th. Work proceeds on Associated Company's pipe line from Coalinga to McKittrick. Standard Oil Company offers 65 cents per barrel for oil for refining purposes. Producers Transportation Company's pipe line between San Luis Bay and San Joaquin Valley nears completion. Edmund Burke files suit in U. S. Circuit Court vs. Southern Pacific Railroad Company to obtain oil lands held by latter. Associated absorbed by Southern Pacific Company. Production of entire State for month, 5,182,889 barrels. Dividends, $652,561.81.

Main Events shown in February, 1910 number of California Derrick

Independent Agencies of Kern River and Coalinga decide to consolidate and to admit no new companies to their ranks. Honolulu Oil Company's gas well shows signs of becoming the first of the big wells in Midway. Active control of Associated Oil Company assumed by Southern Pacific Railroad Company. Remarkable prediction of S. A. Guiberson on expansion of the Midway oil field. The beginning of the great gushers in Midway. Effects of Payne-Aldrich Tariff Law on American Petroleum exports shown. Promoters jailed. Turner Oil Company sold. Other sales. Production of State, 4,469,650 barrels. Dividends, $550,608.12.

Main Events shown in March, 1910 number of California Derrick

Associated Oil Company secures a $25,000,000 loan and issues report showing condition of Company. Honolulu Oil Company, in Buena Vista Hills, Western Kern County, gets great well. Starts a great rush for oil lands belonging to Government. Beginning of disputes over title to oil lands and reappearance of "gun men" to hold "jumped" lands, an interesting return of the old mining days. Standard Oil Company gets great wells in Midway on section 30 and elsewhere. Trips to the oilfields by Stock Exchange and business men become popular. Great stock excitement begins; biggest boom in history of California oil business started. California Midway Oil Company makes large contract with Standard Oil Company for delivery of oil. Standard disregards Ballinger order. Increased use of oil fuel in East. March 15th—Lakeview gusher brought in. May's Oil Company's gusher brought in. Gusher era begun. Good wells in Templor. Production of State for March, 6,022,624 barrels. Dividends, $683,679.29.

Main Events shown in April, 1910 number of California Derrick

American Oilfields Company, operating in the Midway field, gets big wells. Announcement that Bakersfield is to have Stock Exchange, on account of the remarkable gain in the trading and the greatest general oil excitement ever known. The oil excitement at its height. California-Arizona Pipe Line Company organized to construct a pipe line from the San Joaquin Valley through Arizona and into old Mexico to supply the Greene Cananea smelter with oil fuel. (This project never matured). Formal opening of the Producers' Transportation Company's pipe line from San Joaquin Valley to the Coast. Chamber of Commerce of San Francisco announces visit will be made to Coalinga. Standard Oil Company doubles its eight-inch pipe line from the Midway oilfield to Kern River. Standard makes number of large contracts. All records broken by March production. Statement of Associated Oil Company. Great wells of Coalinga Mohawk Oil Company and of California Oilfields, Ltd., Standard's big wells. Resumption of oil trade with France on former basis. Intimations of size of North Midway wells and territory. Great prices for land. Extraordinary number of incorporations of new oil companies. Production for month, 6,355,000 barrels. Dividends, $710,368.12.

Main Events shown in May, 1910 number of California Derrick

Visit of San Francisco Stock Exchange to Coalinga. Entrance into California of Indian Oil Refining Company, to compete with Standard Oil. Large loss of oil by fire sustained by Standard Oil Company upon burning of storage reservoir's contents on San Francisco Bay. Great pipe line dream projects which never eventuated. Sale of Imperial, '3'3" and other properties. Merging of California Stock and Oil Exchange with San Francisco Stock Exchange. Extraordinary excitement over the Pickett Land Bill. Ballinger-Smoot Oil Land Entry Law. Increase of oil boom. Desire of American Chemical Society to visit oilfields—(desire unfulfilled!) Erection of storage tanks by Producers Transportation Company and American Oilfields Company, Ltd. Development of Mascot Oil Company. Oil Men's Protective Organization to combat evil of water penetrating oil sands is urged. Formation of Buick Oil Company, later connected with Burr Brothers. Statistics of great interest. Production for month, 6,995,825 barrels. Dividends, $1,326,626.62.

Main Events shown in June, 1910 number of California Derrick

Decrease shown in exports during April, through bulletin passed by U. S. Department of Interior. Use of air compressor shown to be of utmost practical advantage by Peerless Oil Company. Satisfactory condition of California Oilfields, Ltd., as shown by annual report. Interesting statistics of exports. Wonderful gas section disclosed in Buena Vista Hills. Final consolidation of Independents with closed door; Doheney forces lined up with Independents, making them absolute in their control. Installation by U. S. Government of oil-burning engines in small craft. Unprecedented values of lands and remarkable number of sales. Agitation of interest in Vallecitos, San Benito County, oil district. Yearly report of Associated Oil Company. Court troubles of Esperanza Land and Oil Company. Burning of Standard's gas well in Buena Vista Hills. Big well of Palmer Oil Company in Santa Maria fields. Phenomenal development of San Joaquin Valley lands; increase in huge number of oil company incorporations. Production for month, 7,126,544 barrels. Dividends, $1,402,690.77.

Main Events shown in July, 1910 number of California Derrick

Great advance in consumption of oil. Exports for May, by U. S. Report. Completion of Standard Oil pipe line from Midway to Bakersfield. Various Standard Oil conditions.

by Month as shown through the "California Derrick"

Completion by Union Oil Company of 2,500,000 barrel oil reservoir. Splendid condition of Union. Violence of "claim jumpers" countered by original locators. Beginning of huge tanks at San Luis Obispo to hold product of Lakeview gusher. Disincorporation of Los Alamos Oil & Development Company. Cut in price of oil. Beginning of very gradual decrease in price. Passage of Pickett Bill, as amended. Great number of mergers and land sales. Completion of water system by

Main Events shown in August, 1910 number of California Derrick

Officers of Independent Agency plan to secure loans on oil in storage. Coast Agency planned. British capital invested. Southern Pacific contracts for some Oklahoma oil. Land sales, leases and transfers. Disfavor with which public receives annual report of Associated Oil Company. First entrance of electric power into oilfields for use in pumping wells. Rapidity of oil speed-burning detroyers. More pipe line projects; huge new gushers. Consolidated Midway well and affairs. Development of Midway front. Discovery of new oil regions. Large well in Sherman field. Conditions in Coalinga. Official list of withdrawn oil lands. Review of month. Production for month, greatest in year, 7,368,320 barrels. Dividends, $1,069,917.45.

Main Events shown in September, 1910 number of California Derrick

Standard Oil matters of interest. Exports from California. New reservoirs for Standard at Kern River. Leasing by Independent Agency and Producers Transportation Company of more storage. Storage beginning to create distress. Final arrangements made for loans on oil storage certificates. Oil station in Alaska and new trade there. The cut in price to consumers. The agitation over existing land laws. Oil said to be struck at Petaluma. Usual number of leases and sales of oil lands. The gusher era in full sway. First use of natural gas in oilfields. Visit of Admiral Evans to fields with rumor of purchases by him and Eastern capitalists. Purchase of Cons. Midway Oil Company by Standard Oil Company. Description of construction of great tanks of Producers Transportation Company at Tank Farm, San Luis Obispo. Extension of oil market in Northern America. Col. Timothy Spellacy wins big suit from C. S. Young. Developments in "Vallecitos" oil region. Palmer springs sensation. Extension of Coalinga oilfield. Suggestions regarding oil trade between China and United States for aiding Pacific Coast export increase. Agency springs sensation which comes to nothing. Production for month, 6,858,028 barrels. Dividends, $669,010.

Main Events shown in October, 1910 number of California Derrick

Production, dividend and other reports. Greatest oil deal in many years; the coalition of Independent Agency and Associated Oil Company. Decision of State Supreme Court that "non-assessable" stocks of outside corporations are assessable in California. Doings of the Mining Congress at Los Angeles in regard to Conservation. Great number of sales. Plans of Union Oil Company given out. Standard Oil Company notes. Oil in Mojave desert. Development of new territory by Mr. Ralph Arnold. Entrance of Admiral Evans into oil business; furore created. Extension of Sunset oilfield. Notes in Sunset, Midway & McKittrick. Discoveries of Lake Shore Oil Company and Devils Den Consolidated. Extensive use of portable rigs to hold Government property in new district. The oil-burning battleship question. Guaranteeing storage certificate price at 35 cents per barrel. Purchase of Graciosa pipe line by Palmer interests. Great Northern Railroad orders oil-consuming locomotives. New operations in Ventura. Production for month, 6,552,281 barrels. Dividends, $871,508.69.

Main Events shown in November, 1910 number of California Derrick

Decision on part of Union Oil Company to call a stockholders' meeting to consider a $20,000,000 bond issue for development purposes. Other Union Oil Company matters. Standard Oil matters. Sea shipments of Union Oil and Agency. Review of Yard Decision. San Joaquin Light & Power Company's "invasion" of oil fields. President Taft orders investigation into Southern Pacific Railroad's title to lands held by company under mineral exclusion grant. Incorporation of California Natural Gas Company to use Standard's wonderful gas wells' output; natural gas at last assured fact. Rebuke to Wall Street. Agency lands contract with Canadian Pacific Railroad Company to supply 2,500 barrels of oil per day at good price. Doheney buys in Lost Hills. Midway Five Oil Company gets gusher. Midway Coalinga Consolidated Oil Fields Company appears. Great water project contemplated. Mascot doubles dividend and pays 48 per cent per year. Other gushers, gas wells, etc. Doheney's Mexican contract. Palmer's announced coalition with Independent Agency. Withdrawals by President Taft; official description. Production November, 6,323,189 bbl. Dividends, $549,672.69.

Main Events shown in December, 1910 number of California Derrick

Regular statistical matter, field operations, exports, etc. Suits against Southern Pacific Company up for trial. Gas utilization makes advance; goes to Bakersfield homes. Oil prospects in Cantua-Panoche region, California. Raid on Burr Brothers in New York confuses newspapers and causes attack on Admiral Evans; newspaper reports denied by Wickersham. Spellacy and Evans actions in matter. Easy victory of Standard Oil Company. Statement by Secretary of Interior Ballinger on California oil land matters. Visit of Director of U. S. Geological Survey G. O. Smith. Work of committee appointed to secure remedial legislation by Congress protecting locator. Increase in Agency shipments. Sending oil to Texas. New rotary device. Failure to get cheap oil. Cleveland Oil Company's peculiar actions. Reservoir gives way. Confession of Southern Pacific to non-ownership of oil lands secured under non-mineral land grants. Fuel oil in briquettes. Strike of Pulvadero Oil Company in Coalinga. New maps of State issued by State Mining Bureau. New gushers; purchases; gas wells and general developments in Midway. Production for month (estimated), 6,000,000 barrels. Dividends, $549,672.69.

DIVIDEND NOTICE.

The German Savings and Loan Society, member of the Associated Savings Banks of San Francisco, 526 California street. Mission branch, 2572 Mission street, near 22d. Richmond District Branch, 432 Clement street, between 5th and 6th avenues.

For the half year ending December 31, 1910, a dividend has been declared at the rate of four (4) per cent per annum on all deposits, free of taxes, payable on and after Tuesday, January 3, 1911. Dividends not called for are added to the deposit account and earn dividends from January 1, 1911.

GEORGE TOURNY, Manager.

"Natural Gas in the Great Valley of California"

By A. S. Cooper, E. M., Ex-State Mineralogist of California

(Editor's Note: Mr. Cooper's paper on natural gas will be read with interest not only for what he explains and mentions, but for what he does not mention or explain—the great gas fields in Midway, which produce a "dry" gas. We believe Mr. Cooper is considering primarily what is known as "sufrace gas" or "marsh gas." We should like opinions from others in regard to this matter.)

The Sacramento and San Joaquin valleys together form what is known as the Great Valley of California. The Great Valley is enclosed on the northeast by the Sierra Nevada, on the northwest by the Coast Ranges; the northern end of the Valley is closed by Mt. Shasta and the southern end by Mt. Pirros.

When first formed the Great Valley was roughly shaped like a trough with its ends rounded. The marine strata constituting this trough consists of sandstones and shales. For a long time this trough was occupied by the sea, or until the Pacific Coast was lifted *en masse* to about five hundred feet elevation. While underneath water nearly all the Great Valley was filled with alternating beds of sand and clay up to the present sea level. The present geographic shape of the Great Valley is an elongated oval, with a steep perimeter sloping towards the valley, and nearly a flat floor.

The geological condition of the Valley at the present time is a huge, rough-surfaced trough composed of alternating beds of sandstones and shales filled with unconsolidated beds of sand and clay up to the present level of the sea. These latter beds are over 2,000 feet thick in the center of the Valley, as is shown by drilled wells. As the edges of the Valley are approached the beds thin out until marine sandstones and shales are encountered, at which point stratified rocks dip towards the Valley.

The nearly flat surface of the Valley is approximately four hundred miles long, with an average width of forty miles. Many things tend to prove that the waters beneath the surface below a depth of 1,000 feet are saturated with natural gas and that the waters above this depth are, in many places, charged with natural gas. Sometimes these gaseous waters reach the surface. The escape of gas to the surface through bodies of water also shows that in many places the underlying waters are super-saturated.

The surface outlet of the San Joaquin and Sacramento drainage is by way of Suisun Bay and the Strait of Carquines, to the San Francisco Bay, but the Strait is restricted and it is probable that the bed rocks lie but a short distance below the surface in this vicinity. The rocks beneath the surface are cemented with lime to hardness and imperviousness, and three anticlinal folds cross the Bay of Suisun and the district of Carquines. In short, there is no adequate outlet for the underground waters of the Great Valley, which is canoe-shaped with only a notch at the rim—the Strait—through which the surface water must spill. These conditions favor a slow movement of the underground waters about the border and norther and southern ends of the Valley, with practical stagnation along the lower Sacramento and San Joaquin.

It being impossible for the underground waters of the Great Valley to reach the ocean by subterranean passages under Suisun Bay and the Strait of Carquines, it is probable that the underground waters are forced to the surface along the lower ends and near the axes of the Sacramento and San Joaquin valleys, and find their way on the surface, to the ocean. If this be true—and it undoubtedly is true—saline water and natural gas should be obtained in shallow wells in many places on the San Joaquin and Sacramento rivers, near their lower ends.

There are about twenty-nine wells in San Joaquin County, nearly all of which are scattered throughout the city of Stockton. Only six of them supply water suitable for irrigation purposes and the yield from all of them is small. These wells run possibly from 200 to 900 feet in depth; those of greater depths yield saline water and natural gas. The greater number of flowing wells have been drilled for gas, and, in all such wells, the water with which the gas occurs is saline and is allowed to waste since it is not suitable for drinking purposes or for irrigation. Some of these wells yield a small amount of sulphurated hydrogen. Natural gas is nearly always associated with mineralized waters and sulphurated hydrogen. Nearly all the oil and gas found in California is below the level of the sea, sometimes several thousands of feet below. For the first thousand feet below the Great Valley the purity of the water and the absence of the natural gas shows a fairly rapid circulation. Below that depth the large amount of mineral matter and gas in solution with the water indicates a very sluggish movement of the water. What I am getting at is the fact that the lowest porous rocks of the Great Valley contain the greatest amount of naural gas, which indicates that all the different horizons are supplied from a deep-seated source and that the gas is not indigenous to the strata in which it is found, stored in solution with water. The common source is probably deeply covered. The rocks of the Valley have been more or less disturbed by faulting and anticlinal folds that have produced fissures in the strata. These fissures have served as vents for the passage of natural gas into the overlying strata where it is found today. The constant escape of gas from the floor of the Valley indicates the generation of gas at the present time and that there is more gas present than can go into solution with the water.

Sufficient rain falls on the mountains surrounding the Valley to replace the waters that have escaped from springs and artesian wells, and consequently their flow will remain fairly constant. The unconsolidated clay beds filling the Valley have sealed the upper ends of the fissures in the underlying faults and anticlinals so that when gas is generated it is forced into solution with the water. In the map accompanying this article I have indicated wells producing gas and water with a cross.

A cubic foot of water four thousand feet below the mouth of a spring or an artesian well can hold 5.2 cubic feet of natural gas in solution, when saturated. When the water ascends through fissures, porous rocks or drilled wells, for a distance of one thousand feet, it parts with 1.3 cubic feet of gas. For every thousand feet the water ascends it loses a similar amount of gas, so that when it reaches the surface there is practically no gas left. This brings us to the

Effects of a Gas Lift.

If one hundred feet of a column of water is removed and kept removed from a flowing spring or artesian well by a *gas lift* the flow of water and gas will be greatly increased. Often wells are drilled in which water with gas in solution is within twenty or less feet of the surface, from which a large quantity of water can be removed without lowering the water but a few feet. Such wells can be caused to yield a large supply of water and gas by constantly removing the water from the well by use of a gas lift. Each well has, of

course, its individual characteristics and conditions which must be taken into consideration when installing an operating plant.

Conditions in Stockton.

At the city of Stockton flows of natural gas and water are obtained at the following depths: 1,100 feet; 1,300 feet; 1,450 feet; 1,600 feet; 1,660 feet; 1,740 feet; 1,800 and 1,900 feet, the flow of water and gas increasing in proportion to the depths reached. Some 600,000 feet of natural gas is daily produced from the wells at Stockton and many of these wells have now flowed constantly for more than twenty years.

Other Regions Where Natural Gas Is Plentiful.

At Sacramento the daily production of natural gas is over 300,000 cubic feet. There is a gas well three miles northwest of the Montezuma Hills which has flowed gas and brine continuously for eight years. This well is 1,600 feet deep and furnishes Suisun, Solano County, with 25,000 cubic feet thereof daily. Not far distant from this well there is a pond from which gas is constantly seen to escape, bubbling up through the water. Some four miles south of this well, in the tide lands of Suisun Bay, which nearly surrounds the Potrero Hills, gas is seen bubbling through the water in more than fifty places. Immediately south of the Potrero Hills there are a number of springs from which natural gas bubbles through the water with much force.

Again, seven miles northwest of Orland, in Glenn and Tehama counties, natural gas issues from dug post holes and other shallow excavations, over an area of several square miles. The quantities lying close to the surface here may be judged from the fact that the flow from a well sixteen feet in depth produced a flame five feet in height; and even from small excavations this natural product will flow for a number of days before becoming exhausted. Other places where wells flow constantly are: Tulare Lake, where wells two hundred feet deep produce approximately 1,000 cubic feet of gas per day; Marysville, where the gas comes from less than 100 feet down; Lodi and New Hope, San Joaquin County; Sutter Butte; foothills of the Coast Ranges and Sierra Nevada; various mineral springs; in fact, throughout a vast area.

How To Tell When Natural Gas Is In Solution With Water.

That natural gas is in solution with the water of the Great Valley can easily be shown. When a well ceases to flow water the gas also ceases. As a case in question—the St. Agnes No. 1 well, in Stockton, ceased to flow water in 1891 and simultaneously the gas stopped. A trench was dug from the well to a nearby slough and four feet of the well casing was cut off, when the water and gas in solution was again started. If a standpipe with its upper end open is fitted to the casing of a well yielding water with gas in solution; and if the standpipe is of sufficient height to stop the flow of water, the gas will also stop. A peculiar fact not generally known is that in the winter the flow of water with gas in solution from wells is often from ten to fifteen per cent greater than in late summer. This is the case at Stockton. The flow of gas was determined by a meter and the flow of water estimated. The increase of flow is owing to an increase of hydrostatic pressure, caused by the porous or seamed strata of the foothills filling up to a higher level with water.

The constant proportion of natural gas and water and the constant amount of both flowing daily from a well would indicate that the gas was in solution with the water and not free gas when both gas and water entered the bottom of the well. The constant ratio of the supply of water and natural gas in springs and flowing wells of long continued output is also a proof that the gas and water are in solution before entering the pipe. As the water ascended through fissures in the earth the pressure decreased and the gas naturally was freed.

Existence of Pools.

Undoubtedly, there are large bodies of fluids such as water and oil encased in an impervious strata, which are saturated with natural gas. When a well enters such bodies of fluids, penetrating the impervious roof of the pool, the pressure is removed and the well yields gas for some time, according to the size of the pool. Occasionally, such wells produce a flow of gas which is very violent, but this generally does not last for any considerable length of time, the flow diminishing as the pressure is lessened. If the well is an artesian well, or if there is a gas lift, the gas flow will continue.

The greater part of the Great Valley being at but a slight elevation above the sea level and being surrounded by mountains the strata of which dip towards the valley, the deep wells will usually have an artesian flow, but even then they can be assisted to advantage by a gas lift. Drilled wells have established the fact that the greater the depth reached the longer the artesian water flow is likely to continue and the greater the amount of natural gas in solution is likely to be

Difference In Gas Fields.

The differences between the Great Valley of California and many other gas fields is that the water carrying the natural gas in solution has an artesian flow, or will rise to the surface or near the surface, whereas in most of the other fields the water carrying the gas in solution does not rise to the surface by many feet; in fact, it is so far from the surface that its flow cannot be economically increased by any known apparatus.

Conclusions.

Taking into consideration the above described geologic and geographic conditions the following conclusions must result, and are tenable:

By an underestimate, at least five per cent of interspaces exists between the shales and sandstones, clay and sandbeds which underlie the floor of the Great Valley to a depth of 4,000 feet, which interspaces are filled with water. The amount of natural gas which can be held in solution under existing temperature, pressure and other conditions, with one cubic foot of water between the depths of 1,000 and 4,000 feet will certainly average two cubic feet.

In the nearly flat surface of the Great Valley, marked by the dashes on the map, there are over 16,000 square miles. From a computation made on the basis of the foregoing conclusions and existing geographic and geological conditions described above, there should actually be over.

133,816,320,000,000 cubic feet of natural gas held in solution with the water in the first 4,000 feet beneath the surface!

If one billion cubic feet of this stupendous supply were to be used daily, the total supply would last three hundred and sixty-six years; and after the lapse of that period of time would probably be renewed. Modern methods of drilling and operating gas wells have made it possible to obtain natural gas in the Great Valley at a depth of 4,000 feet, where the surface of the land is only at a slight elevation above tide water and where the hydrostatic pressure is sufficient to produce an artesian flow or raise the water near to the surface.

In conclusion I would say that when there is much smoke there must be some fire; and where there is much natural gas there must be some petroleum. But the gas supply in the Great Valley is in itself of so very great a value that it is almost beyond computation—and in due course of time its worth will receive general recognition through general use.

PRODUCTION FOR NOVEMBER, 1910, IN DETAIL.

In spite of the big Midway wells which threw their production upon the market during November, a decline which would have been marked but for the gushers, was noted in the output of the entire State. When the Midway Premier, the Midway Five and other large producers came in it was generally conceded that in spite of all attempts to curtail there would probably be an increase noted in November statistics

over those of the previous month, but the curtailment was so well engineered that the figures show a decline in the face of all big producers.

Following is our regular detailed monthly statement, giving field, wells producing, total production, consumption and stocks during November, 1910:

	Total wells. producing.	Total production for month.
Kern River	1,521	1,161,210
McKittrick	174	395,366
Midway	298	1,118,418
Sunset	137	660,210
Coalinga	693	1,482,411
Watsonville	3	2,100
Arroyo Grande	6	3,800
Lompoc	19	72,500
Santa Maria	142	539,350
Summerland	134	6,100
Santa Paula	245	39,958
Newhall	76	14,468
Salt Lake	257	257,364
Los Angeles	416	36,106
Whittier-Coyote	140	83,219
Puente	55	3,200
Fullerton-Brea Canon	240	447,409
Total	4,556	6,323,189

Stocks, Consumption and Averages.

	Barrels.
Stocks, October 31, 1910	30,646,429
Production, November, 1910	6,323,189
	36,969,618
Consumption, November, 1910	*5,714,706
Stocks, November 30, 1910	31,254,912
Average daily production	210,773
Average daily consumption	*190,490
Average daily surplus	20,283

*This includes 495,539 bbls. lost by seepage.

FIELD OPERATIONS DURING NOVEMBER, 1910, IN DETAIL.

Following are the field operations during November, as given out by the report of the Standard Oil Company:

Field.	Rigs Comp.	Wells Drg.	Wells Comp.	Wells Abd.
Kern River	16	38	15	....
McKittrick	29	16	7	....
Midway	30	242	26	....
Sunset	4	62	8	....
Coalinga	18	132	12	....
Watsonville	....	2	....	....
Arroyo Grande	....	2	....	....
Lompoc	....	8	....	....
Santa Maria	1	40	2	....
Summerland	....	2	....	....
Santa Paula	4	34	4	1
Newhall	....	8	....	....
Salt Lake	2	15	5	....
Los Angeles	....	....	....	....
Whittier-Coyote	1	19	1	....
Puente	2	1	....	....
Fullerton-Brea Canon	2	47	2	....
Repetto	....	1	....	....
Total	109	669	82	1

SEA SHIPMENTS BY THE UNION AND INDEPENDENTS DURING NOVEMBER, 1910.

During the month of November the Producers Transportation Company shipped from the port at San Luis 223,000 bbls., while the Union Oil Company shipped from the same port 398,000 bbls., making a total of 621,000 bbls., the Union being the marketer of the Producers. From Ventura the Union's shipments were 8,700 bbls. and from San Pedro it sent out 3,600 bbls. This constitutes the deep sea shipments of the Union Oil Company.

NOTES ABOUT THE STANDARD OIL COMPANY IN CALIFORNIA.

It is announced that the Standard has made a contract with the Nevada Consolidated Copper Company, controlled by the Guggenheims, to supply the latter company with about 1000 barrels of fuel oil daily, at Ely, Nevada; price not stipulated. This contract may be greatly increased in case the oil is used for the smelters.

The company's well on section 10, 32-23, Midway, after passing through 500 feet of oil formations, came in good for 1000 barrels per day—a deep well. The known formations were passed through, a light oil was cased off and away below the heretofore penetrated sands a 15 gravity oil was secured, considerably enhancing the value of the company's surrounding territory. The Standard is said to have purchased acreage at Los Nietos for a tank "farm." Truth of this not yet confirmed. Company has recently made some contracts on San Francisco Bay at a low price, said to have been induced through low contract oil for which the company did not wish to provide storage. The Great Northern Railway is purchasing from the Standard at a stated price of 85 cents per barrel; other Northern roads are also securing their oil from Standard, at a slightly higher figure. The Steptoe Smelter Works at McGill, Nevada, is said to have contracted with Standard for 1500 barrels of oil per day.

The Standard recently brought in some more good wells in Midway, several on section 12, 32-23, and a new gusher on section 30, said to be good for 5000 barrels per day. Section 30 has been made famous by Standard's wells.

CONSULAR REPORT ON FOREIGN COMPETITION WITH STANDARD OIL COMPANY.

(From Consul-General James T. Du Bois, Singapore.)

The Royal Dutch Shell group has entered into competition with the Standard Oil Company, and is placing oil in France, and, it is reported here, has also determined to sell benzine in the United States, and that four big tank steamers started some time ago for Boston.

Heretofore the Dutch combination has disposed of its products in the vicinity of production, and consequently placed their oil on these markets at a very cheap rate. It will be another thing to transport oil 13,000 miles and face a great competitor in its home markets, but the Dutch group seem to believe that they have sufficiently developed to succeed in the wider field, and this makes the situation interesting.

Oil is very cheap at Singapore, with the price under competition going slowly down from day to day, so that 14 cents would buy as much oil at the end of October as 20 cents would in August. The result of the bitter fight between the great oil interests in the Far East is a reduction of prices to such an extent that the Chinamen are laying in good stores at very low prices in the hope of future profits, while the native customers enjoy the luxury of plentiful light. It has been estimated that it will cost the rival interests at least $250,000 if the contest is continued much longer.

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REMEDIAL LEGISLATION THOUGHT SURE.

Chances for remedial legislation at this session of Congress in the matter of securing title to lands effected by the Yard and Munzer decisions of the Land Office, Department of the Interior, appear at present very favorable. The legislation enacted will probably validate the claims of the prospectors who complied with the law as it was before the Yard decision was enunciated, and will in all probability be coupled with a leasing clause, as Director of the U. S. Geological Survey, George Otis Smith, is strongly for the latter. President Taft is said to have signified his approval of immediate steps to validate the claims affected. United States Senator Flint has introduced two bills in Congress relating to oil lands. The first provides for that broad and generous term "remedial legislation"; the second provides for a system of leasing from the Government at an annual rental of $2.50 per acre and a royalty of 5 per cent of the gross income, based upon sales of oil. The Senator's leasing measure gives 160 acres of land free, minus a leasing clause of any kind, to "wild-catters." Director of the Geological Survey George Otis Smith, is said to have the best idea of what is actually needed here, of any of those who desire to see a new law enacted. The passage of some law seems certain, for the conservationists, the various oil associations (represented by the "Committee of Seven"), Congressman S. C. Smith, Senator Flint and the Chamber of Mines and Oil, of Los Angeles, are all working most strenuously for a change to almost anything from the present. So many reams of paper have been devoted to this question that there is no use going into the matter further until something has actually been accomplished at the Capitol.

WHERE WE STAND.

We give, in another column, a review of the United States Geological Survey Report on the production of petroleum during the year 1909, but recently issued. This report is what may well be termed the very highest authority on the petroleum industry, coming from the very highest source—the United States Geological Survey.

Into the making up of a report of the nature of the one just issued there enters an extraordinary amount of labor. This labor is caused by the necessity for authentic information—information that must be correct, concise, unimpeachable. It is not always that the Geological Survey has available certain necessary statistics. These must be secured in each case from the highest and most trustworthy authority in the sphere where such materials are lacking; and credit for same is always given to those who have worked, directly or indirectly, in conjunction with the Geological Survey in the dissemination of trustful reports, if these reports have aided in the making up of the Geological Survey's final report.

In acknowledging indebtedness to the various oil magazines from which information was obtained which went into the making up of the final report, by Dr. David T. Day, the following journals only were mentioned, as quoted:

"In preparing this report much valuable information has been obtained from the Oil Investors' Journal, now the Oil and Gas Journal, of St. Louis; the Oil, Paint and Drug Reporter; the Oil City Derrick; the Petroleum Gazette; the California Derrick; the Petroleum Review, of London, and the Moniteur du Petrol Roumain."

It is to be taken for granted then, that the seven journals mentioned comprise the oil authorities of the world in their spheres. Of the seven, only one newspaper is mentioned—the Oil City Derrick. Without a doubt the Oil City Derrick's statistical reports are the best to be had, coming as they do directly from the Standard Oil Company. Of the magazines it may be said that all are recognized as the best in their respective spheres. Not one of them but we have had occasion to quote in the California Derrick time and again. With the exception of the California Derrick no mention is made of any magazine or newspaper west of the Rocky Mountains. The inference then, is plain; we are alone in our sphere and, while we do not care to draw any comparisons, we shall continue to stay there. We wish to say now, that to feel that our matter has met with the approval of the Governmental authorities to the extent that it is the only oil magazine in the West to receive recognition, is the highest possible praise we could have received.

VOLCANIC ORIGIN OF PETROLEUM GASES.

Methane or marsh gas is, as is well known, an inevitable component part of all the gases accompanying petroleum. The well-known French scientist, Gottier, has recently made some interesting investigations on the question of the origin of petroleum gases generally, and on causes of formation of marsh gas, particularly in volcanic processes.

Steam, which is always present in large quantities in the eruptions of lava, acts on the silicates which contain iron, protoxide, which latter is being during these processes transformed into iron oxide by setting free hydrogen. This latter in its turn enters into chemical reaction with carbon monoxide, giving birth to water, carbon dioxide and methane. The so-called optimum temperature or the temperature most favorable to the reaction is 1,000 degrees C. The quantity of methane formed depends upon the mass of reacting hydrogen. Besides the action of superheated steam on iron silicates, hydrogen can also be formed by means of the reaction of carbon monoxide with steam at 1,300 degrees C., but at lower temperatures there is always a formation of methane. This latter in its turn can, when entering into contact with chlorides or nitrates, submit to various transformations and condensations of its molecules, thus forming the higher gaseous and liquid hydrocarbons.

GEOLOGICAL SURVEY ISSUES REPORT.

Comes Rather Late, But Justifies Delay By Thoroughness.

The United States Geological Survey, under the direction of Dr. David T. Day, has issued a most comprehensive, thorough and in all ways excellent report on "The Production of Petroleum in 1909." It will be observed that exactly one year has been taken to compile and prepare the information which has been presented in so compact and excellent a manner. This delay appears to us unavoidable, knowing as we do the difficulty of obtaining correct statistics, the hard task of proper compilation, the great range of subjects covered in so little space. This report appears to us to be by all means the best ever issued by the Department, which is, indeed, high praise.

Of special interest to California oil operators are the paragraphs and statistics showing the growth of the California production. To quote directly from the report itself:

"California commanded the attention and interest of oil producers during 1909, and this interest increased with a

prospect of a total so great in 1910 as to more than offset the declines expected in the other oil fields.

* * * * * * *

"The striking features of production were the increase in both quantity and percentage in California and the sharp declines in both in Illinois, Indiana, Kansas and Louisiana.

* * * * * * *

Quantity.

"California, as was expected, took first place in petroleum production, changing places with Oklahoma. California's product was about 6,500,000 barrels more than any other State has ever produced in a year. Should California show a further proportionate increase in 1910, the total would be more than double the highest yield of Pennsylvania."

Interesting Features of Report.

Aside from the production compilations showing the various standings of the States during the year, there are numerous interesting features in the report. For instance, the "Total Production in the United States from 1859 to 1909, Inclusive," is given. This is something which various newspapers and magazines have guessed at and have issued special numbers about in great profusion, but with what correctness remains to be conjectured. In the report we have figures which are authentic and must stand, all of which is of the greatest value to oil men. The consumption of fuel oil, with the names of the railroads which used fuel oil on their lines in 1909; statistics showing the number of miles made per barrel of oil consumed; use of oil fuel in the United States Navy; prices of oil; well records; pipe line runs and deliveries; the pipe lines of California; Geological Survey field work in California; the exports; the foreign markets; lastly, the foreign oil fields have received the most careful attention, and more than merit close study.

Considering the fact that this report purports to be merely an advance chapter from "*Mineral Resources of the United States Calendar Year*, 1909," we are constrained to wonder what further could be shown of the Petroleum Industry, other than the manufacture of by-products, that would hold general interest. The report is already comprehensive and deserves the highest praise.

In making up the report aid was secured from various trustworthy sources, and acknowledgments were made to such magazines, papers and persons, in the following paragraph:

Acknowledgments.

In preparing this report much valuable information has been obtained from the Oil Investors' Journal, now the Oil and Gas Journal of St. Louis; the Oil, Paint and Drug Reporter; the Oil City Derrick; the Petroleum Gazette; the California Derrick; the Petroleum Review, of London; and the Moniteur du Petrol Roumain. The various pipe-line companies of the United States have given untiring aid. Many items have also been obtained in co-operation with Mr. F. W. De Wolf, acting director of the Illinois Geological Survey, and with Messrs. Ralph Arnold, M. J. Munn, A. C. Veatch, C. W. Washburne, Carl D. Smith, E. G. Woodruff, and C. H. Wegemann, of the United States Geological Survey. Credit should be given the Oil City Derrick for well-record tables for Pennsylvania and New York, Ohio, Indiana, West Virginia, Illinois, Kentucky, Kansas, and Oklahoma; and to the Oil Investors' Journal for well-record tables for Texas and Louisiana.

FRACTIONATION OF PETROLEUM.

Interesting Bulletin Issued by Geological Survey.

Under the title "Fractionation of Crude Petroleum by Capillary Diffusion," the Geological Survey some time since published a bulletin which, in this part of the country at least, has not had the wide circulation it deserves. Under the direction of Dr. David T. Day, in charge of the petroleum branch of the Survey, a large number of very interesting experiments were carried out, the results throwing light on some questions of considerable practical interest to oil men.

The object of the experiments was to determine to what extent, if any, crude oil was changed in physical properties by being passed through columns of earth of various sorts, and also by being mixed with earth and afterward separated by adding water. For the details of these experiments, reference must be had to the original work, but the results showed, in brief:

First, that when crude Pennsylvania petroleum was forced through a thick layer of dried and powdered clay, a very decided fractionation took place; that is, the oil was separated into fractions or portions differing considerably in specific gravity and color, the lightest fractions being such as had passed through the greatest thickness of earth. For instance, in one case, using layers of earth five feet in thickness, and a crude of 42 8-10 degrees Beaume (0.810 specific gravity), the portion which passed entirely through the earth was 45 9-10 degrees Beaume (0.796 specific gravity), while that portion remaining behind at the end of the test was 40 6-10 degrees Beaume (0.8205 specific gravity). To show that this was an actual separation, and not merely the removal by the earth of some portion of the oil, as in filtering through bone black, it is only necessary to call attention to the fact that the first fraction is considerably lighter than the crude taken, while the last is materially heavier.

The second series of tests showed a separation of the oil in a different manner, by the addition of small quantities of water to the oil-soaked earth. It is well known that if any earthy substance is saturated with oil, and water then be added, a large part of the oil will be separated, water taking its place in the pores of the earth. By adding water in small portions to the oil-earth mixture, and pouring off the oil after each addition of water, it was found that the first portion set free was considerably lighter than the last, but all were heavier than the original oil. Many other experiments, which cannot be mentioned in detail, indicate that the changes in gravity are accompanied by corresponding changes in color, the portions passing through the greatest amount of earth being paler than the original oil, while the residues are darker. Also that the earth takes up the saturated hydrocarbons by preference, leaving the unsaturated bodies behind.

The practical value of these experiments is in explaining the difference between what are often called "shale oils," and those from the oil sands lying often immediately below. It is sometimes the case in heavy oil territory that a well carried into a thicker layer of porous shale will produce a little oil of a high gravity and low viscosity, often of a pale color, thus raising hopes of finding a light oil sand at greater depth. On penetrating the sand, however, the oil would be of the usual low gravity and black color. This has often occurred, and has been the source of great disappointment to prospectors.

Oils in storage underground must often be carried from point to point, by shifting of strata or by water currents, under great pressure, and it may well be supposed that if in such travel a quantity of oil were forced against a stratum of porous shale or fullers' earth, a very considerable amount might in time be filtered through. Many small deposits of light colored oil, such as the green oil of Adams Canon, and the amber oil from the Zenith well at Oil City, could probably be ascribed to such action, while others, such as the white oil of Placerita, are more likely to have resulted from distillation and recondensation due to volcanic or metamorphic heat.

Such researches as these, while they may have no value directly measurable in money, are of much ultimate value, as they tend to clear up the mystery which long shrouded the conditions under which oil exists and may be found. Every bit of information bearing on the mechanics of oil storage and production in nature is of assistance, sooner or later, to

both prospector and producer, and no one interested in this subject can afford to omit a careful study of this work.

This bulletin (No. 365 of the Geological Survey) may be had without charge, so long as the supply lasts, on application to The Director, U. S. Geological Survey, Washington, D. C.

LAW FRAMED BY "COMMITTEE OF SEVEN."

Following is the remedial law prepared by the Committee of Seven, representing the various oil associations, and which President Taft is said to approve, which will, it is now thought, be passed at the present session of Congress:

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That where an association of persons, severally qualified to occupy, explore, locate and purchase public lands under and pursuant to the mineral laws of the United States, shall hereafter have entered thereunder into possession of such unappropriated lands as contain petroleum, or other mineral oils, or gas, and are chiefly valuable therefor, not at the time of such entry into possession, covered by an executive withdrawal pursuant to the provisions of the act approved June 25, 1910, entitled 'An act to authorize the President of the United States to make withdrawals of public lands in certain cases,' or otherwise reserved by or under statutory authority, claiming under such possession not in excess of 20 acres for each individual of such association and in all not exceeding 160 acres in any claim so initiated and thereafter such association or persons, or their successor or successors in interest, shall have diligently and in good faith complied with the provisions of the mining laws, and by drilling or other appropriate exploration work shall have effected an actual discovery of oil or gas within the limits of such claim, such association of persons, or their successor or successors in interest shall be entitled to apply for and receive patent for the whole claim, as in other cases, in the manner and upon the terms and conditions provided by the mining laws, and no assignment or conveyance of any undivided interest or interests in such claim to any one or more of the persons of such association, or to any other qualified person, association of persons, or corporation, prior to discovery, shall impair the right to patent;

"Provided, That the foregoing provisions shall not be constructed to apply to any such claims upon lands chiefly valuable for minerals other than oil and gas."

AGREEABLE MATTER IN OIL CITY NEWSPAPER.

The Oil City (Pa.) *Derrick* has recently printed the following interesting paragraphs:

"The Superior Fuel."

A very significant item of news comes from Seattle, where the steamship Honolulan has arrived with a cargo of 7,000 tons of coal from Baltimore. Its fuel was 14,000 barrels of oil, and as it traveled 14,000 miles around Cape Horn, it required precisely one barrel of oil to transport 7,000 tons of coal one mile, part of the route being extremely strenuous navigation. But one stop was made en route. Obviously oil is a cheaper fuel than coal, or it would not be used in the transportation of the latter from one of the cheapest coal ports on the Atlantic seaboard. Baltimore and Norfolk are the ports where coal is cheapest.

Incidentally there are several interesting comparisons to be made. In fuel value the ton of coal is equal to about one-half that weight in oil. Thus the 14,000 barrels of oil taken by the Honoluluan at Baltimore would weigh about 1,866 tons. Had the vessel used coal for fuel it would have burned about 3,500 tons, or one-half as much as it carried as cargo. In other words, it would have taken on a burden of 10,500 tons, fuel and cargo, instead of the 8,800 tons it had when it left Baltimore. This is one of the great advantages of oil over coal fuel, another being the decreased stoking room force and still another the greater convenience and economy of handling the liquid fuel when taking it aboard. Another curious fact in connection with this trip of the Honoluluan is that at Baltimore coal and oil have approximately the same value, measured by respective heat units, but at Seattle the coal brings in the market fully twice as much, while the oil is cheaper than at Baltimore. As fuel, then, there is no competition between oil and coal at Seattle, the coal being twice as costly, at least.

* * * *

California Production.

"While the production of California wells is declining slightly, the consumption of fuel oil is increasing. The creation of a market for any commodity is a slow process, but in the case of petroleum it has been urged vigorously and the California markets have not been one whit behind their fellows elsewhere in finding purchasers. The lower prices of the past six months have been an aid to the sellers, who have captured new contracts. Railroads in the Northwest have profited by the experience of those in the Southwest and are beginning to run locomotives with oil fuel, both in the interest of economy and in that of cleanliness. The result is that the production statement of November is the most hopeful one since the Lakeview gusher came on the scene."

These paragraphs, coming from such a source, are so very agreeable to us that we really cannot help commenting upon and printing them. We are certain that they cannot fail to make quite as pleasant an impression upon their other California readers.

OIL-BURNING DREADNAUGHTS.

Press dispatches state that the general navy board, of which Admiral Dewey is president, has recommended that the next Dreadnaught be built to burn oil exclusively and that future vessels of this class be likewise equipped. The recommendation that tank steamers should also be constructed and should accompany the Dreadnaughts was also made.

If the recommendations of the board are favorably considered, and there is every chance that they will be, the greatest departure in recent times will have been inaugurated. Coaling stations will be done away with as tank steamers will supply the fleet at any time it is necessary. Other advantages have been too many times enumerated in these columns to go further into the matter. It is expected that other countries will have to follow the example set by this country unless the Diesel engine experiments prove the internal combustion engine very much superior to plain crude as fuel.

DEVIL'S DEN CONSOLIDATED'S STRIKE.

An excellent strike by the Devil's Den Consolidated Oil Company was announced through press dispatches about the first of the year. The strike was obtained on the northwest quarter of section 30, 26-21, Lost Hills, about three hundred feet from the Lake Shore well and at a depth of 535 feet. The oil formations were first encountered at a depth of about 300 feet and were found similar to those in the Lake Shore. There was considerable gas and the portable rig became more or less spattered over with oil, causing the report to circulate that a gusher had been struck. The company owns only 160 acres of land in the Lost Hills, but as this land is now proven its value is without question. The company is an old one and owns approximately 1400 acres, most of which is in the Devil's Den District. The officials of the company are: Judge J. B. Wallace, president; I. T. Bell, secretary, both of Visalia; R. Kuerzel, J. J. White and J. E. Ennis of Oakland; Wm. Linderman of Hanford; R. Hays Smith of San Francisco.

Cementing Wells with Sulphur and Asphaltum

By A. S. Cooper, E. M., Ex-State Mineralogist of California

The hereinafter described invention relates to the art of cementing wells by which the surface water is cut off, and it consists essentially in an improved method and a novel closure, as I shall proceed to describe.

This method, though embracing some of the general steps of the usual process of cementing with a semi-fluid aqueous mass of Portland cement, differs therefrom in such essentials as are necessarily required by the employment of sulphur and asphaltum, and these distinctions result not only in a change of the method in certain particulars but in a decided advantage in the use of their materials even in the closure formed by their employment.

Their advantages are the object of this invention, as is fully demonstrated by referring to the accompanying drawings.

Thus, turning to Figure 1, we have a section of a well bore showing the initial locations of the parts and the beginning of the process. Figure 2 is a similar view showing the condition of affairs when the sulphur and asphaltum are melted and pressure applied to drive the liquid mass up between the casing and the walls of the well bore. Going to figure 3, we see the lowering of the casing through the penetrable seal below, while the sulphur and asphaltum are still in a fluid condition. Now, finally, we will turn to figure 4, which shows the condition of the sulphur and asphaltum when hardened, and the closure completed. This view also shows that there has been a resumption of drilling and illustrates likewise the reinsertion of the hot water circulation, when it is desired to remelt the closure and remove the casing.

Referring first to figure 1, the well bore is shown—(1) the first step is to fill the bottom of the bore with cobblestones; then, (2)—pack them down firmly to form a support for the casing.

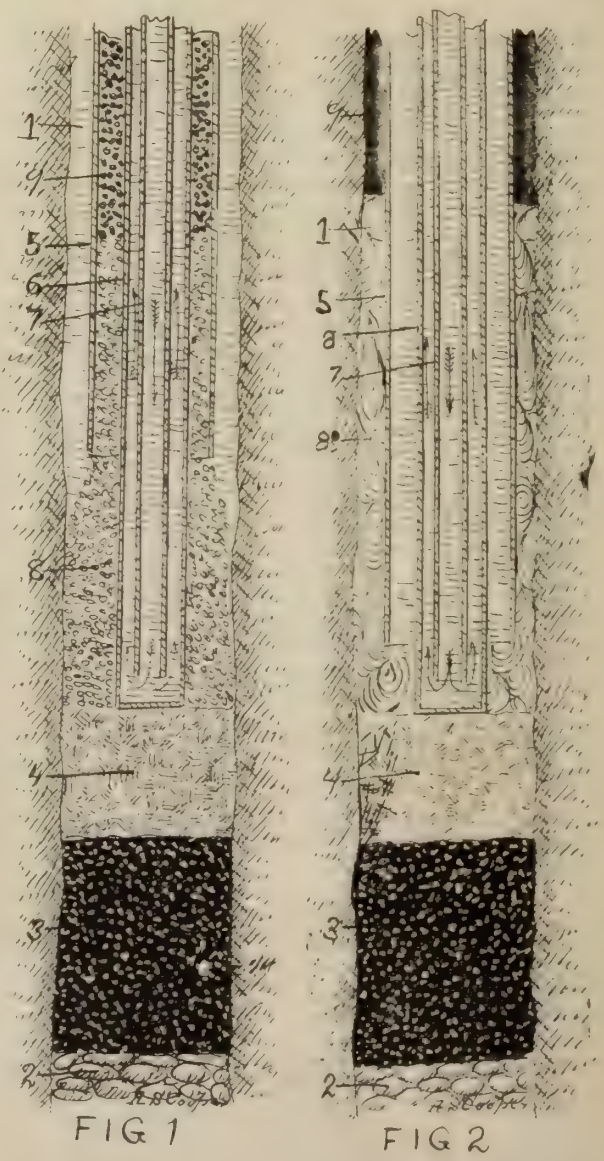
Upon the cobblestones is placed a well packed by the (3) body of some material which while penetrable to the casing will form a seal around the casing against the passage into it by any liquid. In practice, what is known as bituminous sand rock, such as is often used for paving streets and sidewalks, will serve the purpose. To prevent the heat, the use of which will presently be described, from affecting the sealing body, there will be placed on top of it a body (4) of clay, adobe, or similar earth. The supporting cobbles (2) and the overlying bodies (3 and 4) reach to the height in the bore hole at which it is desired to effect the cementing or closure to shut off the surface water.

A casing is then lowered into the well bore (5), or a string of casing and this is suspended above the surface of the clay body (4) a few feet. From the surface of the well is let down into and through the casing a pipe (6) with a closed bottom which rests upon the clay (4); and into this pipe and reaching nearly to its bottom is let an inner pipe (7), the lower end of which is open.

Sulphur in pieces about the size of an egg, or smaller, is then dropped down through the casing (5) forming a mass (8) resting on the clay (4), and rising on the casing around the pipe (6) to a proper height. It is best to use in connection with the sulphur, asphaltum (9). This is broken in pieces about the size of an egg or smaller, which are dropped into the casing on top of the sulphur.

Everything being now ready, a stream of water, heated to say 250 degrees Fahrenheit, the temperature of water in a boiler when under a pressure of 15 lbs. to the square inch, is passed down through the pipe and then forced up through pipe (6), the circulation being indicated by arrows in Fig. 2.

This will melt both the sulphur and the asphaltum (9) and while in this liquid state pressure is applied through the top of the casing to the liquid mass and it is thereby forced out of the casing and up around it and fills the space between it and the wall of the bore, as is shown in Fig. 2, (the asphaltum), on account of its lower gravity seeking the top of the liquid mass, as shown; and it will fill any cracks in the sulphur or fit around the formation and prevent leaks.



At this time, now, while the sulphur and asphaltum are still in a liquid state and under pressure, the casing is lowered, and, by its own weight descends through the clay (4) and the

sealing, bituminous sandrock (3) until it rests upon the cobble support (2) as shown in Fig. 3.

Being thus sealed the liquid sulphur cannot pass back into the casing when the pressure is relieved and the sealing body (3) is fully protected from the heat of the clay body (4). The sealing also stops any circulation of water between the casing and the bore, and the sulphur and the asphaltum are not disturbed in hardening.

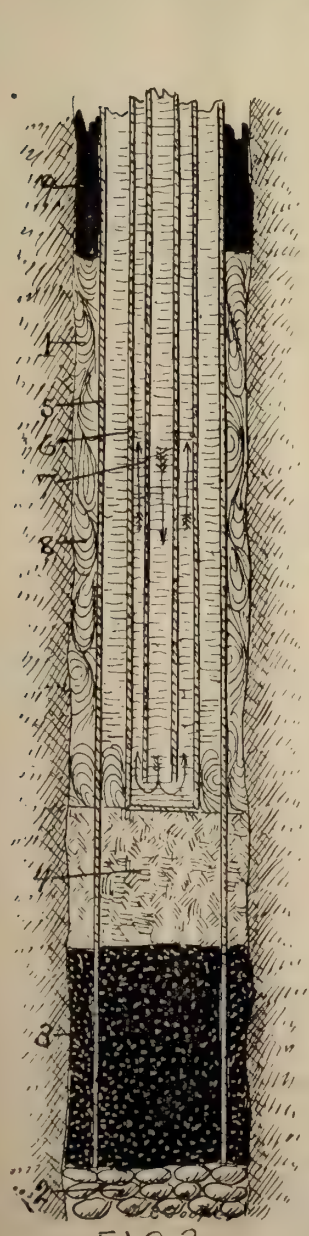


FIG 3

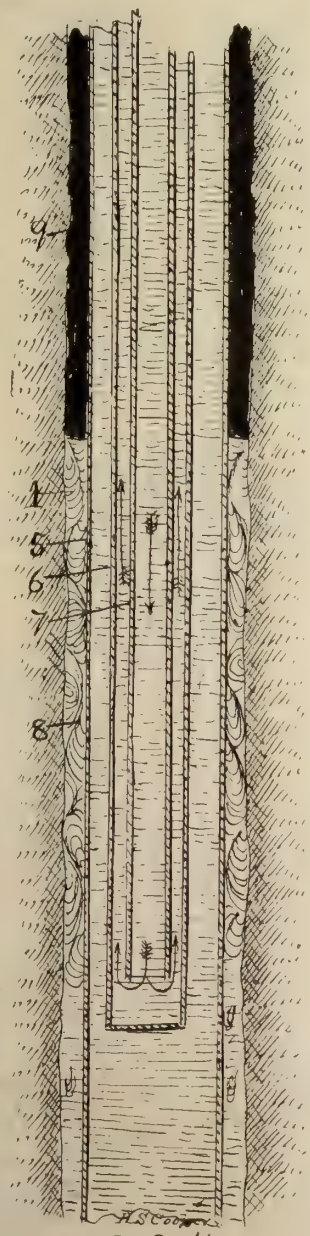


FIG 4

The circulating heated medium is now stopped and the sulphur and asphaltum are allowed to cool and harden in due course, which will be in a day or two; or, their hardening may be hastened if time is a factor by circulating cold water through the pipes (7 and 6). If the pipe (6) is caught by the cooling and hardening of the sulphur and asphaltum it can be released by circulating the heated liquid through the pipes (7 and 6) for a short time, until the sulphur and asphaltum immediately surrounding pipe (6) is melted, and then withdrawing the same. The asphaltum keeps the sulphur from crystallizing and becoming brittle when it cools. When the sulphur and asphaltum are solidified as indicated in Fig. 4, they cement the casing to the well bore and form a closure to the well bore and to the surface water. The pipes (7 and 6) are then moved and drilling resumed through the casing which resumption will, as shown in Fig 4, remove the clay, bitumen and rock from the inside of the casing.

If, for any reason, a mistake has been made in the zone at which the bore should be cemented or the cementing prove successful, the string of casing thus used is not lost, for it may be removed by letting down the pipes (7 and 6) again, as shown in Fig. 4, re-establishing the circulation of the superheated water and thereby melting the cemented sulphur and asphaltum which may be recovered for use again, as upon remelting them they will drop down the well. This is a decided contrast to the results in cementing down a well with Portland cement, which is obviously permanent, resulting in a loss of both the casing and cementitious substances if, as frequently happens, the judgment of the operator as to the proper zone of cementing is at fault.

With Portland cement the work must be done hastily and therefore with questionable precision, because of the quick initial set of the semi-fluid, aqueous mass, and thereafter one must wait for a period of two or four weeks for the final set of the cement before resuming drilling, during which delay the employees are usually drawing wages; while, with the sulphur process there need be no undue haste, for the mobility of the melted substances is preserved as long as the liquifying heat is maintained; nor is there the loss attendant upon a long wait, because the sulphur and asphaltum will, even under natural conditions, solidify in a day or two; and even this short time may be abbreviated by artificial cooling.

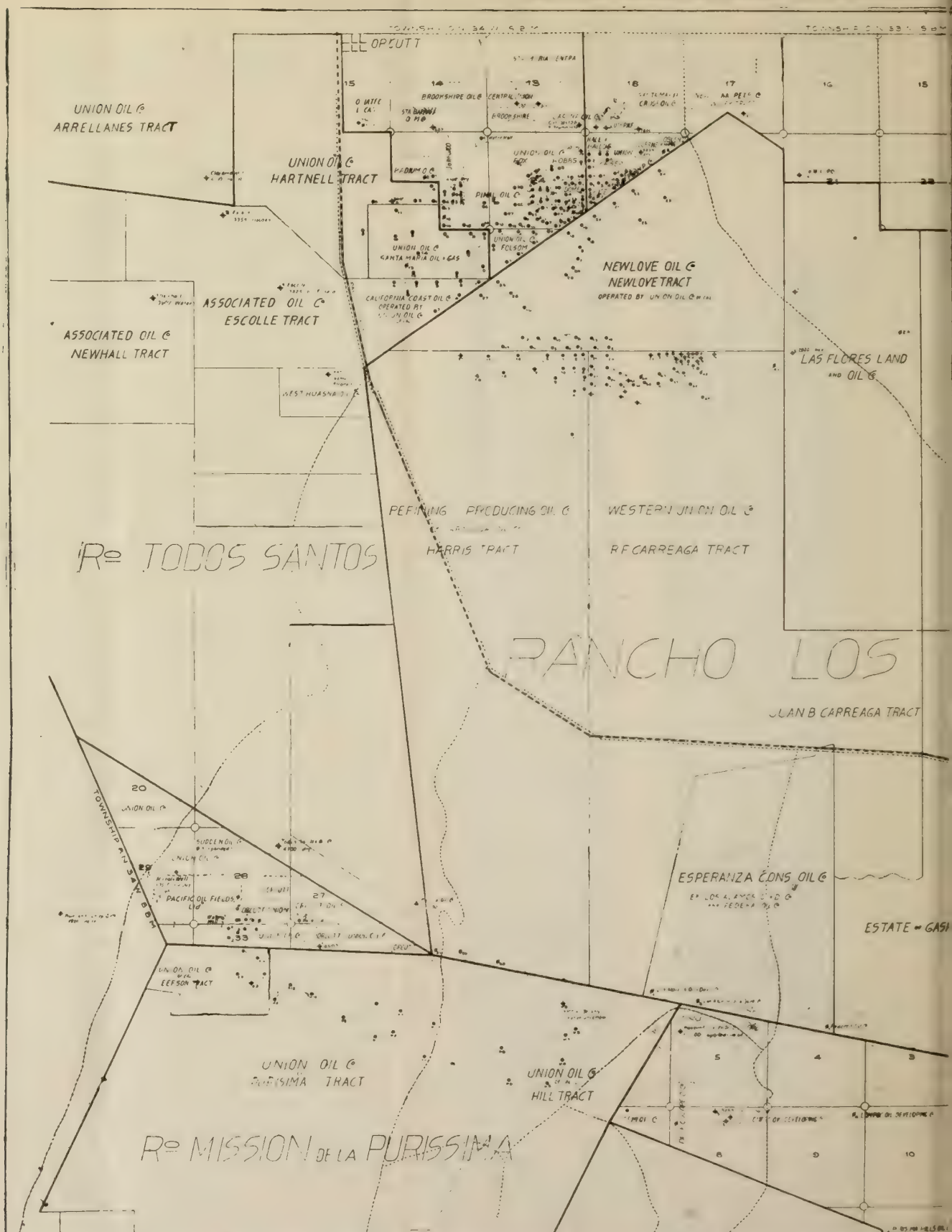
There is a further advantage to be noted in economy, due to the fact that sulphur and asphaltum may be easily applied, recovered and used again, while Portland cement once used is wholly lost.

Another advantage of the use of sulphur and asphaltum is that these substances will liquefy and harden even if petroleum oil be present, whereas Portland cement is kept from setting and hardening by a small amount of oil; again, sulphur and asphaltum will liquefy and harden even if water be present in excess, whereas a large amount of water destroys the setting qualities of Portland cement.

When sulphur and asphaltum are liquefied by heat their molecules glide past each other with the greatest of ease and assume with readiness the form of any vessel in which they may be placed. Portland cement is composed of granules of solid matter, infinitely greater in size than any molecule, their granules being solid and rough move upon each other with great difficulty when compared with the liquid. A great pressure is required to force a slush of Portland cement from the interior of the casing of a well to the pressure required to force liquid asphaltum and sulphur through the same path.

Even when great pressure is used, through water, the water may form a passage through the cement without forcing all the cement from the casing. Some parts of the space between the casing and the wall of the well may be filled with Portland cement whereas other parts may contain none.

The fear that cementing with Portland cement will prove unsuccessful induces the owner of a well to postpone trying to do so until the casing reaches such a depth as to make it very difficult, or impossible. Thus the value of the described process may be estimated.



Key to State Mining Bureau's New Map of Santa Maria.—A key to the new map issued by the State Mining Bureau reduction would have been so great as to make the map almost valueless. For this reason we think it well to give the foll drilling wells by a dot with one line crossing through it; wagon roads indicated by a line-dot; railroads by the usual railr

Canyon and Lompoc Oil Field.

courtesy of the State Mineralogist. (See description on page 18.)

e Santa Maria, Cat Canyon and Lompoc Oil Field is printed on the map itself but had it been included in this photo, the nation: Producing wells are indicated by a black dot; abandoned wells by a black dot with two lines crossing through it; pe lines by a dot-dash-dot line. Gravity of the oil is given as 17. (By Paul W. Prutzman)

The Development of the Cat Canyon, Santa Maria Oil District.

By W. D. Maltman.

Some four years ago the Palmer Oil Company, then newly incorporated, started in to develop what was known as the Cat Canyon end of the Santa Maria oil field. Their temerity was remarked upon by all the "experts" of Santa Maria and predictions were freely made that their efforts would come to nothing. However, the company persisted in drilling a well in spite of all advice upon the subject, and at the end of about a year they brought in Palmer No. 1, producing at the outset about 100 barrels of oil per day.

This well was an anomaly in oil well history. Whilst predictors were remarking about the freak well which had been discovered, its production steadily became larger, at the end of some months having increased its output to 5,000 barrels per day; from 5,000 barrels it rapidly jumped up to 10,000 and then, at its best, to 20,000 barrels per day. That well created the greatest furore in California oil circles that had been known up to the time of the Silver Tip well in Coalinga. Palmer opened an entirely new district in the Santa Maria oilfield, and developments immediately spread to the East and North. Cat Canyon was then a recognized oil district.

Since bringing in Palmer No. 1 the company has completed two additional wells which have demonstrated that No. 1 was by no means a freak well, but that Cat Canyon possessed the greatest strata of oil sands in the known world with the exception of the Baku fields of Russia.

Observing the richness of the Cat Canyon district the older corporations of the original Santa Maria field immediately acquired large holdings in the eastern end of the new region. The New Pennsylvania Oil Company was among the first of these older corporations to invest in Cat Canyon. This company was immediately followed by the Pinal Oil Company, which has been one of the most profitable organizations in the State, having paid to date over $1,080,000 in dividends.

Following these companies were the Brooks Oil Company, the West Oil Company, Henderson Oil Company, Sisquoc Oil Oil companies, the two former of which partly compose the newly organized Palmer Union Oil Company. The Princess Oil Company, which has been operating to the south of Cat Canyon has recently secured 400 acres of land about three mile northeast of the Cat Canyon Oil Company's holdings. This latter company is drilling a half mile north of the Palmer Stendel tract, its holdings consisting of 240 acres of land. When the company has brought in its well it will prove over a square mile of territory, adding enormously to the value of surrounding properties. The development of this company's well is therefore being watched with very keen interest by Santa Maria operators. Blue shale was encountered very recently at a depth of 560 feet, which is several hundred feet shallower than was anticipated. The company is meeting with exceptional success in sinking the well, making about 40 feet a day with a standard rig.

The Summit Oil Company, operating to the northwest of the Cat Canyon Oil Company, is also being watched with great interest as the same importance is attached to its development. Their No. 1 well is down over 1,200 feet with a very favorable showing.

One of the most important features, to the developing companies in the Cat Canyon field, is the contract recently made by the Brooks Oil Company with the California Liquid Asphalt Company for the sale of their oil at a price of 55c per barrel, delivered to the Sisquoc depot, which is located one mile northwest of the Cat Canyon Company.

The Santa Maria field in general has been slow to receive the attention which it warrants, largely due to the fact that the land has been held in large tracts, thus confining operations to a few companies.

This feature, however, has been overcome of late since outside capital is recognizing the great possibilities of the field and the many advantages for disposing of its oil. With the enormous capital which is now being invested and the extension of pipe line facilities comes the greatest era in the history of the development of the Santa Maria field.

STATE MINING BUREAU ISSUES EXCELLENT MAPS.

The State Mining Bureau has just issued, under the direction of Lewis E. Aubury, State Mineralogist, maps of the oil fields of Santa Barbara County, collectively and also illustrating the Santa Maria and Cat Canyon oil field, with a great abundance of detail. The price of the Santa Barbara County may has been fixed at 40 cents, with five cents additional for postage. The price of the Santa Maria and Cat Canyon map is 50 cents, with five cents postage added.

In all the maps that have ben completed, and in others that are to follow, railroads, highways and producing, non-producing and drilling wells, the exact location of each correctly delineated are included. Each map has been carefully calculated to meet the needs of oil prospectors, of the owners of properties and the seekers for information abroad and at home. The co-operation of producers and the auxiliary aids furnished by original maps have been utilized to make the information as full and accurate as possible.

Field assistants are now at work in the Kern County fields and the Kern River, Sunset, Midway and McKittrick districts will be mapped carefully and with great attention to details that will be of commercial value. Every oil region of California that has been developed or that has immediate promise of development will be mapped by the State Mining Bureau as early as possible.

NO MORE PROSECUTION OF STANDARD.

We are in receipt of a dispatch from an authentic source saying that a satisfactory agreement has been reached between the Vacuum Oil Company, the Austrian branch of the Standard Oil Company, and the Austro-Hungarian Minister of Finance in the controversy between that company and the oil concern controlled by Austro-Hungarian capital. The State Department only recently received this information in a cablegram from Ambassador Kerens in Vienna. The agreement provides for the removal within eight days of all repressive measures affecting the American company, but subject to the approval of the entire Cabinet.

The dispute was initiated, it is said, by local Austro-Hungarian refiners who employed antiquated methods and machinery. The Vacuum Oil Company is incomparably superior to the foreign concern both as to equipment and method, and the products turned out are proportionately better. It is organized under the laws of Austria-Hungary, but is controlled entirely by American capital. A similar controversy is threatened in Roumania.

STANDARD WILL DEVELOP VAST OHIO HOLDINGS.

It is reported the Standard Oil Company is planning to spend millions of dollars in developing new oil and gas territory in Ohio. Between 200,000 and 300,000 acres are under lease by the Standard and independent producers. The territory extends over eleven counties, from Lorain on the north to Hocking County on the south. Oil development has been going on for the last two years in some of the counties and the indications are that the new field will prove a rich one. Oil men have held that there was an arch dividing the Trenton rock and the Clinton sand formations in Ohio, which extended from Sandusky on Lake Erie to Cincinnati, and as the producing formation dips about twenty feet to the mile from the northerly portion of the state, it was considered impractical to search for oil in the counties mentioned. Some inexperienced farmers at Bremen started drilling two years ago and brought in a good well, showing the folly of the opinions held by oil men. Knowledge of the strike was kept secret for a while; other wells were put down and good producers being obtained, the Standard stepped in and bought the production of these wells and covered the district with leases.

STANDARD GIVES CITY OF TAFT VALUABLE PERMISSION.

The city of Taft has been granted permission by the Standard Oil Company to connect the Taft Public Utilities Company's water system with that of the Standard, the latter company's water to be used only in case of fire. The Standard pipe line is four inches in diameter and the water pressure is 180 pounds.

CLEVELAND OIL COMPANY OFFICIALS INDICTED.

Charged with fraudulent use of the mails in connection with the sale of stock in the Cleveland Oil Company, the following men were indicted by the Federal Grand Jury working in Los Angeles recently, after a raid made upon the office of the company several weeks previous: Wm. J. Batchelder, Thos. M. Montgomery, Grant G. Gillette, W. A. France and Edson France. Bail, which was immediately given, was fixed by the court as follows: Gillette, $15,000; Batchelder and W. A. France, $10,000 each; Montgomery and Edson France, $5000 each. Following the raid upon the office of the company and the exposures made the company's stock was ordered taken from the Los Angeles Stock Exchange quotation board. A new company has been organized to take over the stock and bonds of the Cleveland Oil Company, and to effect a complete re-organization of same. The new company is called the New York-Midway Oil Company and is capitalized for $1,250,000, shares of par value of $1 each. It is hoped that the new company can "make a go" of it, but confidence of the Cleveland's stockholders is sadly shattered and the entire assets of the company, amounting to about $115,000, will probably be absorbed by the bondholders if new money is not forthcoming. Recently the Midway lease of the company was forfeited and its troubles, which have been brewing for a long time, came to a head with the indictments above mentioned.

LOS ANGELES MAY GET GAS.

According to our excellent contemporary, the Los Angeles *Mining Review*, the Pacific Gas & Electric Company of Los Angeles is investigating the extent of the natural gas available in the Whittier-Fullerton oil field, with a view to piping it to Los Angeles for commercial purposes. It is said that this will be done if a sufficient quantity can be secured at a fair price. The gas company believes that it can pipe natural gas to the southern metropolis at a smaller cost than it can manufacture gas from petroleum, which is costing the company more than ever before. The distance will not be as great as the line from the Buena Vista hills to Bakersfield, even to the farthest point in the Whittier field. Another boon for Los Angeles.

The *Mining Review* is also authority for the following: "The Standard Oil Company is becoming an active purchaser of oil in the southern fields. It has contracted to take the entire supply of the Central in the Whittier field and is said to be ready to compete with the Union in Ventura County, where that company has secured practically all of the light oil produced at 75 cents per barrel at the well. This will necessitate the building by the Standard of a pipe line from the Newhall line into the Sespe and Santa Paula districts."

BOSTON PACIFIC OIL COMPANY BRINGS SUIT.

Shady Transactions the Cause.

The Boston Pacific Oil Company, operating in Kern County, brought suit in the United States Circuit Court recently to restrain Charles W. Gregg, of Colorado, and his associates in California, from disposing of 200,000 shares of stock, which it is claimed have been secured by fraud. The stock is valued at $1 per share.

In the complaint it is contended that Gregg and his associates held 200,000 shares of the 219,965 shares of capital stock issued by the Pacific Sunset Oil Company, and in order to trade this stock for an equal amount of shares of the Boston Pacific, "watered" their production by filling a 25,000 or 30,000 barrel reservoir containing about 3600 barrels of oil, so as to make it appear that the sump contained the larger amount of oil.

It is alleged that Gregg, in entering into negotiations with John Fillius, F. G. King and A. B. Dodd, who organized the Boston Pacific Company, incorporated last March, represented that the Pacific Sunset had an option on the 80 acres leased on which it was operating for $80,000; that it had four wells on the property, each of which was producing 70 barrels of oil a day, and that it had in storage between 25,000 and 30,000 barrels of oil. The plaintiffs state that the wells of the Pacific Sunset had been purposely shut down for several days so that on the day of inspection by the representatives of the Boston Pacific the accumulated oil did make a big showing which was the means of deceiving the plaintiffs; that the actual production in any well was not in excess of 20 barrels a day; and, furthermore, that it had never had an obtion on the 80 acres of land.

It is also charged that Gregg had represented his company as having an agreement with the Independent Oil Producers' Agency, whereby that company agreed to take all the oil produced at 55 cents a barrel, which was "utterly and unqualifiedly false."

It is the desire of Fillius and his company to regain possession of the 200,000 shares and they have also filed a bill for damages to the amount of $58,000. District Judge Van Fleet set February 6, 1911, for hearing of the injunction.

PRODUCERS' TRANSPORTATION COMPANY'S OFFICES MOVED.

The headquarters of the Producers' Transportation Company will from now on be at San Luis Obispo instead of Bakersfield. The change has just recently been decided upon, and came with changes in the management. E. W. Clark, formerly of the Pacific Coast Railway Company, has been appointed general manager of the company, vice W. T. Cushing, resigned.

THE AMERICAN EXPORT TRADE DURING NOVEMBER.

(From the *Petroleum Review*, London.)

The petroleum export trade of America during November continued to show the same regrettable decrease in quantity, as has been the chief characteristic of recent monthly records. An encouraging increase was noted during the month in regard to the exports of crude oils and naphthas, but this was more than counterbalanced by the continued decreases recorded in illuminating and lubricating grades. The official returns for the past eleven months are also evidence of the great competition which American products now have to face on the world's markets, and so far this year the total petroleum exports of America have been no less than 100,000,000 gallons behind those for the same periods of 1909. Now that prices have fallen to a low level, there seems some probability that the export trade will receive an impetus, but in any case the outlook for the near future is far from encouraging.

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We trust that our readers will note in the above paragraph that while illuminating and lubricating exports decreased during November, there was a healthy increase in crude oils and naphthas; crude oils, mostly California crude oils! What the DERRICK has claimed continually is that very thing which has come to pass; that California's market would show a continual increase as the monthly reports come in.

ISSUES REPORT ON SAN JUAN OIL FIELD.

The United States Geological Survey has issued a preliminary report on the San Juan, Utah, oil field, written by Mr. H. E. Gregory. The report is the second section referring to gas and petroleum in the advance chapter from the contributions to economic geology by the members of the Survey. Eight distinct oil-bearing sands are mentioned in the report, which is short and readable. The report can be had by writing to Washington, or, in case we have enough calls for same will be printed in an early issue.

KELLOGG OIL COMPANY TAKES OVER BUSINESS OF F. R. KELLOGG.

The Kellogg Oil Company has been incorporated to take over the business heretofore carried on under the partnership name of F. R. Kellogg & Co. The capitalization is $50,000, divided into 5000 shares of the value of $10 each, fully paid up. The company's office is located at 520 Douglas building, Los Angeles. The officers of the company are: F. R. Kellogg, president; S. R. Rosenberg, vice-president; G. J. Symington, secretary.

TELEPHONE AND WATER PIPE FOR LOST HILLS.

According to a recent dispatch the town of Lost Hills is to have a telephone connecting it with the outside world and water will also be piped through a new pipe line to be constructed in the very near future.

LARGE OIL DEAL REPORTED.

A local (San Francisco) newspaper is authority for the statement that the Associated Oil Company has closed a contract for ten years with railroads in the Northwest for the delivery of 25,000 barrels of oil daily. This contract means, therefore, that 10,000,000 barrels per year for ten years, or 100,000,000 barrels of oil has been contracted for by the railroads. If such is the case, it is the largest contract yet entered into on the Pacific Coast for fuel oil. The deliveries are divided between the Chicago, Milwaukee & Puget Sound, the Northern Pacific and the Great Northern railroads. The report hardly seems creditable.

MAYLAIN CRUDE FORFEITS LEASE.

The Maylian Crude Oil Company, which has until recently operated a lease from the Mt. Diablo Oil Mining & Development Company, on section 26, 32-23, Midway, forfeited the lease recently because of shortage of funds wherewith to continue development. All improvements, consisting of two rigs, boilers, pipe lines, engines, houses, etc., revert to the Mt. Diablo. A small amount of personal property was sold under the hammer for the benefit of the creditors, as, according to the terms of the lease it did not belong to the Mt. Diablo.

REFUSES TO SELL 4,000,000 BARRELS OF OIL.

At a meeting of the executive committee of the Independent Producers Agency, held recently in Bakersfield, the Associated Oil Company made an offer to buy outright from the Agency 4,000,000 barrels of oil, at the price the members of the Agency are receiving. The returns for November netted the members 47 cents, and it is probable that the Associated would have accepted this figure. The offer of the Associated was not accepted by the Agency, following an examination in the condition of the oil industry at the present time and its prospects in the near future. There is too great a future to sell the oil at a low prate after storage expenses have been deducted.

"SIMI OIL FIELD."

A clipping from the *Oil Age*, a Los Angeles weekly which succeeded the *Oil Industry*, says that there is oil in the Simi Valley. Los Angeles parties have secured a lease there, the Union Oil Company, it is announced, will drill there and the Scarab Oil Company is down 800 feet there. The "Pittsburg Petroleum Company" has also erected a "couple of rigs" in the eastern part of the valley. Somebody has said that somebody else said that a third person quoted another insider to the effect that the valley should "come in" in the near future.

WESTERN PACIFIC RAILROAD MAY TRAVERSE OIL FIELDS.

A report which has been widely circulated is to the effect that the Western Pacific Railroad will construct a line through the San Joaquin Valley to Los Angeles, passing through the oil fields of the West Side of Kern County en route. A dispatch purporting to come from E. L. Lomax, passenger traffic manager of the Western Pacific, says that the road will extend its lines from Oakland south as soon as possible.

Authentic Information About Foreign Oilfields and Conditions

BRILLIANT FUTURE OF MEXICO AS OIL-PRODUCING COUNTRY.

Mexico is coming to the fore as an oil-producing country with the most astounding rapidity. The latest development in this neighboring country to attract the attention of American and especially California oil producers, is the statement that the capital backing the Doheney companies will, within the immediate future, begin the construction of a $3,000,000 pipe line 190 miles in length which will be capable of transporting a daily minimum of 20,000 barrels from the Huasteca oilfields to the City of Mexico. The new company will be known as the Huasteca Petroleum Company's Interior Pipe Line System. E. L. Doheney, head and moving spirit of the Huasteca Petroleum Company, Mexican Petroleum Company, Ltd., Mexican Petroleum Company of Delaware, Mexican Petroleum Company of California, American Petroleum Company and American Oilfields Company, the latter two companies operating in California, is authority for the statements just made.

The rise and success of the Doheney companies has been remarkable. They have become in a very short time the greatest oil producers in Mexico. Gushers have sprung to meet their drills. One of their wells is now producing 30,000 barrels of oil per day; all of their wells have been huge. The production is contracted for a long time in advance. The backing of the management has been exceptional also. To quote from a statement recently made by Mr. Doheney, who has just returned from Mexico with a strong party of capitalists, expenditures of the Huasteca Petroleum Company alone have been greatly in excess of $4,000,000. Following are some of Mr. Dohoney's statements, showing how money has been and will be invested to bring the well-merited success now being enjoyed:

"The total expenditure of the Huasteca Petroleum Company, alone for oil storage, railways, pipe lines and incidental improvements in Mexico will aggregate between $4,000,000 and $4,500,000, and all this outlay will have been made in the next year and a half.

"It should be remembered that about $6,000,000, American currency, has been invested in these properties; that when a machine shop was needed, a sawmill, a boiler factory, a barrel factory, a warehouse full of supplies, a water system to bring water to the camps, a town for the employes to live in, stores, telephones—even a Federal telegraph station, as well as telephone lines, a hospital, and last of all, but fortunately rarely occupied, a calaboose, the cost has had to be met by the stockholders.

"When development was undertaken a long distance from a railroad and near Tamiahua Lake, steamboats and launches to the number of fourteen were purchased by the company. When a railroad was required to transport materials from what was then the railway terminus, a line was built by the company and equipped with three locomotives and over 125 cars, mostly tank cars. When a pipe line was needed to carry oil for a distance of nearly seventy miles, the money was immediately forthcoming and the pipe line was built.

"Without the money to meet all these expenses and supply all these requirements, the company could never have been a success, and the success it has attained is due to the stockholders who had confidence in the judgment of the management and supplied the necessary funds."

Mr. Doheney reported gratifying progress all along the line of Mexican Petroleum, Limited, activities. "Our storage at present, planned and being constructed," he said, "approximates 7,000,000 barrels capacity, all at and north of Cerro Azul.

"We have decided to start at once the work of construction on the first unit of the steam railway that will eventually traverse the entire acreage of the company's holdings in Huasteca Vera Cruzana on the Gulf of Mexico. This unit of road, thirty-five miles in length, will extend from the San Geronimo pumping station at Cerro Azul. Fifteen thousand ties have already been cut and the rails and rolling stock have been ordered. The work will be pushed rapidly and the road will, according to present plans, be open for operation July 1, 1911."

At present the sales of the Mexican Petroleum's production average more than $400,000 per month.

Recently a dividend was announced and further dividends cannot help but be forthcoming. A romance is tame, compared to the story of these companies.

FURTHER REPORTS ON MEXICAN COMPANIES, IN WHICH CALIFORNIA CAPITAL IS INTERESTED.

The Huasteca Petroleum Company has just completed the tenth steel storage tank at the Tampico terminus of its pipe line. This gives a storage capacity at this point of about 600,000 barrels. Good progress is being made in the construction of the concrete reservoirs and the contractor will soon be ready to start putting the concrete in the first one to be built. Well No. 7 is still producing at the rate of about 25,000 barrels per day. This is by no means the capacity, for there is an excess pressure on the valves of about 280 pounds.

On the Ebano property of the Mexican Petroleum Company six wells are drilling, these being No. 6½ Dicha, which is down 1,142 feet; No. 12 Dicha, down 3,112 feet; No. 28 Laguna, 742 feet; No. 2 Chijol, 1,771 feet; No. 5 Chijol, 1,785 feet and No. 1 Chapapote, 440 feet. The present production is about 5,000 barrels per day, and to fill the necessary complement on contract with the railroad company some oil is being delivered from the Tampico field.

CONSULAR REPORT ON OIL PRODUCTION IN MEXICO.

(From Consul Clarence A. Miller, Tampico.)

During the last two months two large wells have been developed, one of which is now producing about 15,000 barrels and the other about 20,000 barrels per day. Both wells are at Juan Casiano, and oil is being pumped through the pipe line to Tampico at the rate of about 20,000 per day. Part of this oil is being delivered to a refinery which recently concluded a contract with an oil company here for 2,500,000 barrels of oil at 92½ cents gold per barrel. Part of the oil is being stored in large tanks near Tampico, and about fifty carloads are being daily shipped into the interior. The oil company referred to is now planning to build two large reservoirs for the storage of its large production.

A number of new companies are receiving machinery and preparing to begin operations, including a company in which it is understood two American capitalists are interested.

Some new English companies have also been recently organized and are preparing to begin operations in the near future. Another company has some good wells near Tampico and it is rumored that it will build a refinery here.

OIL WELLS OF BURMA.

(From Consul-General William H. Michael, Calcutta.)

The most productive oil fields of Burma are on the eastern side of Arakon Yoma in the Irrawaddy Valley, in which is the well-known Yenangyaung field, with an average daily output estimated at 56,000 poods. Oil is known to exist farther south and north, but these areas have not been thoroughly prospected. The oil produced in the Yenangyaung field has a flashing point under 40 degrees F., while its specific gravity is 0.8247.

Nine companies, with a nominal capital of about $56,000,000, are actively engaged either in the extraction of petroleum or in the allied industries, such as refining, etc., and over $20,000,000 has already been invested in the enterprise. This is apart from the number of small native concerns engaged in working petroleum in their hereditary oil reserves.

Burma exported 784,852 gallons of kerosene oil during the year ended March 31, 1910, valued at $131,000, and 3,852,160 gallons of fuel oil, valued at $165,000, while her coastwise exports to India proper amounted to 84,280,000 gallons.

RECENT INCORPORATIONS.

The following oil companies have filed certificates of incorporation with the Secretary of State of California:

National Capital Oil Company, San Francisco; incorporated December 19; capital, $500,000; directors, T. P. Spiers, B. B. Spiers of San Jose; E. Westlake, Frank McGowan and F. J. Westlake of San Francisco.

Dominion Oil Company, Phoenix, Ariz.; articles filed December 19; capital, $1,000,000; directors, George D. Forbes, James Reid, F. F. Shurly, T. E. Bradburn, R. G. Lind and J. B. McLaren.

Sunpark Oil Company, Los Angeles; incorporated December 19; capital, $100,000; directors, F. B. Henderson, B. E. Green, M. H. Whittier, M. J. Connell and Robert Marsh, all of Los Angeles.

Hutton-Vandever Oil Company, San Francisco; incorporated December 22; capital, $200,000; directors, H. W. Hutton, G. T. Vandever, W. E. Dillon, D. A. Leary and J. L. Leary, all of San Francisco.

WICKERSHAM SUBMITS GOVERNMENTS BRIEF AGAINST STANDARD OIL.

A reply brief in the case of the Standard Oil Company against the United States has been filed by Attorney-General Wickersham with the Supreme Court. Under the heading of what is a combination, under the first section of the anti-trust act, the brief says:

> The laws of the various States under which these decisions have been rendered are in effect, as applied to interstate commerce, substantially the same as the Sherman act applied to interstate commerce. These statutes have been enforced against the Standard Oil combination as to interstate commerce in several States, and various constituent corporations of this combination excluded from those States. Like decisions have been rendered against other similar combinations. How many other cases are now pending we cannot say, but it is evident that the States are enforcing these statutes, and unless the Federal Government enforces the Sherman act we shall have the anomalous condition of these great combinations being held invalid and excluded from the States, while as to interstate commerce, they may continue to do business under the shield of Federal authority.

It is declared that the evidence that the defendant companies obtained rebates and discriminatory rates in the transportation of their product as against their competitors, and engaged in unfair and oppressive methods of competition, thereby destroying the smaller manufactures and dealers throughout the country, is material in this case, which is considered the most important case before any court in recent years.

FIGHTING FOR STATE MINERALOGIST'S POSITION.

A determined fight is being made by certain interests to "get" State Mineralogist Lewis E. Aubury, or at least to have his position occupied by another and less active person. The Coalinga *Record* says that R. P.McLaughlin has been indorsed by the Coalinga Chamber of Commerce and by the Taft Chamber of Commerce. The *Record's* position is peculiar to us at this time as while it publishes one boost after another for Aubury on its front sheet it attacks him virulently and violently in its editorial columns. The position of State Mineralogist is appointive and it is expected that Governor Hiram Johnson will shortly announce the name of the appointee.

WILL DRILL IN KETTLEMAN HILLS.

The Baltimore Oil Company, consisting mostly of Los Angeles men, will develop 1280 acres of oil lands in the Kettleman Hills in the belief that the company will obtain high gravity oil. The property is not far from the Bohemian and the Devil's Den Companies, both of which have a light oil. The directors of the company are: Dr. F. L. A. Hamilton, president; Dr. J. N. Morrison, vice-president; Warren Wallace, secretary; J. W. Wallace and C. L. Cooper.

MEXICAN PETROLEUM COMPANY BONDS.

The stockholders of the Mexican Petroleum Company, Ltd., have voted to float a bond issue of $2,000,000, the money to be used in constructing pipe lines and tanks and the bonds to be convertible into stock within two years. E. L. Doheney is president of the Mexican Petroleum Company, Ltd., the Mexican Petroleum Company, and the Huasteca Petroleum company.

"OIL IN ARIZONA."

Apparently there is an oil "boom" eight miles north of Bowie, Arizona. Experienced oil men say that this "field"—oil was taken out of a well 214 feet deep and they call it a field already—is different from any other oil field they have yet seen. It probably is; but nevertheless all the locatable Government land within a long distance from the first well has already been occupied. Further developments anxiously awaited!

OIL EDITOR HEADS COMPANY.

We are pleased to clip the following excerpts from the *Oil Age*, mentioned in another column, showing the incorporation of a new company headed by the editor of that magazine:

"Wm. Nelson Shell, the editor of the *Oil Age*, heads a new company that has recently been organized to operate in the California fields. The company is known as the Shell Petroleum Company and was incorporated under the laws of California, December 5, 1910, with an authorized capitalization of $500,000, divided into two classes of stock, namely, $250,000 six per cent cumulative preferred stock and $250,000 common stock. The preferred stock and one-half of the common stock is in the treasury and none of the preferred stock is to be sold for less than par, which is 25 cents per share. The common stock is designed solely for bonus purposes, the promoters receiving one-half and the other half to be given to the purchasers of the first offerings of preferred stock.

"The directorate consists of Wm. Nelson Shell, president and treasurer; M. H. Schell, vice-president; C. S. Boemler, secretary, and Earle C. Orr, there being one vacancy to be filled by a purchaser of a large block of the preferred stock. In order to promote economy the office of the company will be temporarily maintained in the office of the *Oil Age*, 609 Lissness building, Los Angeles."

COALINGA---By Guy H. Salisbury,

California's Best Known Oil Correspondent.

BERKELEY-COALINGA IN SAND.

The Berkeley-Coalinga Oil Company, drilling with a portable rig on section 2, 21-14, is 340 feet deep and have drilled into an oil sand six feet. The outcroppings back of this well indicate 35 feet of sand; the sand is coarse and the oil indicates 20 degrees gravity. This appears to be the top of the zone "D" stand. There is considerable gas pressure, the oil rising to within six feet of the top of the casing. Some years ago, when several wells were drilled in this locality, this zone "D" sand did not appear to be prolific and was not tested. The Westlake Rommel was one of the wells, and one or two companies stopped in the water sand and went no further. The well has been bailed to test the value of this strike, and has yielded one barrel of clear, clean oil per hour. This has extended the field west a little and will be watched by property owners and operators on the west side.

DEVILS DEN ACTIVE AGAIN.

The Devils Den District is again showing much activity, development work progressing rapidly. The Welcome Oil Company, section 2, 26-18, have set up a 70 horsepower boiler, have the engine on the block, much of the tools placed on the property and the rig is ready to spud in well No. 1. The derrick is the heaviest south of Coalinga. The T. L. Hannah well, section 25, 25-18, is producing about 10 barrels per day; some of the operators nearby are using this oil for fuel. The Chanslor & Canfield well, on section 25, 25-18, just south of the Hannah well, is over 3000 feet deep with 5⅝-inch casing, being drilled in with a portable rig. The well is showing some oil. C. Turner has a heavy Keystone portable rig set up just west of the Hannah well, on the same section, and is now drilling.

UNITED DEVELOPMENT COMPANY GETS SAND AT 2,440 FEET.

The United Development Company, operating on section 19, 20-15, are in the oil sand with 8¼-inch casing with well No. 1 at 2,440 feet; the sand appears to be very prolific. The water was shut off at 2,402 feet in a shell with 10-inch casing. Well No. 2 is 200 feet deep with 16-inch stovepipe casing. This string will be carried about 300 feet when the 12½-inch casing will be set in. Well No. 3, on the east line of the north half of the southwest quarter, is now ready for the drillers. A boiler plant has been set up to accommodate three drilling rigs.

WORK ON LOCATED LANDS.

Considerable work has been done on located land through the Kettleman Hills and the Devils Den, to comply with the mining laws and stand as assessment work for the year ending December 31, 1911. This work consists largely of the erecting of cabins, stub derricks, foundations for rigs, road work, etc. Several parties have filed on Southern Pacific land in the Kettleman Hills, Devils Den and Coalinga. A number of parties were out on land the last day of the year, a few with guns, many with their blankets, to see that the "other fellow" did not set up notices.

BRITISH CONS. AGAIN.

The British Consolidated Oil Corporation, Limited, Clarence B. Wisner, general manager: On section 12, 19-15, well No. 2 is 2,980 feet deep with 2½-inch casing. The water will be shut off at about 3,100 feet with the 8 1-3 inch string. The 8¼-inch heavy casing will be carried into the oil sand. The present indications, taking the logs back of this property, suggests 3,500 feet to the pay sand. This is light oil territory and the depth of this well indicates 23 degrees gravity oil.

ALADDIN UNDER NEW MANAGEMENT.

The Aladdin Oil Company, section 6, 21-15, under the new management, have been fishing out the "trouble" in the Burr drilled well. The mass of material, in the form of junk, that has been fished out of this well resembles a "cash" of some supply house. "Snarled and tangled" pieces of sucker rods, tubing, casing, pieces of a packer, etc., have been fished out, and "more is on the way." That wonderful lamp of "Aladdin," with the Mystical Ring, may yet be brought to the surface.

PLUTO IN GOOD SHAPE.

The Pluto Oil Company, operating in the Devils Den District, on section 19, 25-19, has cemented off the water at about 2,300 feet with 12½-inch casing; the hole is reported to be in good shape; the formation is brown shale. The 10-inch casing will be carried into the oil sand, or may be used in shutting off the next water sand, should any be encountered. The gas through the brown shale has come up at times, in the seams, with great pressure.

The Pluto Oil Company, section 2, 21-16, is drilling well No. 1 deeper, and is now over 1,350 feet deep with the rotary. It is estimated that the pay sand will be reached at about 1,800 feet.

Using Portable Rig

C. T. Daugherty, one of the oldest pioneer oil operators in the Devils Den District, is now running a heavy portable rig on his property, on the southwest quarter of section 34, 25-18. The well is 150 feet deep with 12½-inch casing.

BOYCHESTER AGAIN DRILLING.

The Boychester Oil Company, section 18, 21-15, is again drilling. The 6¼-inch casing was pulled out and damaged joints removed and the string replaced.

BRITISH INTERESTS IN COALINGA

By Guy H. Salisbury.

(Editor's Note: *In response to a request as to the extent of British capital invested and enterprise displayed in the Coalinga Oilfield, Mr. Salisbury has written the following good matter. It will undoubtedly be of great interest to our many British readers.*)

California Oilfields, Limited

The British and Canadian oil companies in this field have been active and very thorough in their development work, have invested a large amount of money—and have been successful.

The most noticeable company among the number is the California Oilfields, Limited, of which the Balfour-Guthrie Company have been the financial agents. Pioneers among the British interests in this field, they have acquired title to about 4,800 acres of oil land, the major part of which is now proven territory. The property lies on the east side field. At present the company is drilling on more than 12 wells, have 85 wells producing, ranging in their production from 50 barrels to over 1,200 barrels per day.

The town of Balfour, built and owned by this company, which is located on section 27, 19-15, is the most completely equipped oil mining town in the world. The office and the bungalow, quarters for the officers, are modern in their appointments. The lodging quarters for the men are models of neatness and comfort, two stories high, each man having a separate room. Bothrooms, with hot and cold water, are provided for the workmen; large billiard and reading rooms provided with the literature of the day—all done to entertain the men when off tower; that is, after working hours. The post-office is named "Oilfields"; here are a general merchandise store, conducted by A. P. May, Incorporated, and a barber shop, conducted in a modern, up-to-date manner. The machine shops are the best equipped on the Coast, and none but the best mechanics are employed. There are also a large tank shop, a boiler shop and several buildings used for supply stores; large corrugated iron stables for the many animals employed in teaming; an up-to-date garage for the care of the autos required upon the property. The office building is of reinforced concrete, the bungalow is of frame, and contains suites for the officers and visitors, a large reading room, billiard and pool tables, a large fireplace, and a dining room, everything being very conveniently arranged. All buildings are on brick or concrete foundations. A powerful traction engine does most of the hauling from Coalinga to Balfour. The roads about the town are oiled and graded and are kept in first-class condition all of the time. There is a good fire protection system. Natural gas is used in heating, cooking and illuminating the entire plant. A first-class electric light plant is also in place and an ice plant furnishes ice during most of the year. It is estimated that this town has cost the company about $200,000 in buildings and equipments just detailed and it is truly a good showing of money well spent.

THE BRITISH CONSOLIDATED.

The British Consolidated Oil Corporation, Limited, owns in fee, 240 acres of oil land in this field, 200 acres on the East Side field and 40 acres on the West Side. Clarence B. Wisner is the company's general manager. The company is drilling two wells on the East Side. On section 26, 19-15, well No. 2 is in the oil sand at about 2,500 feet; well No. 1 is producing about 450 barrels per day of 21 gravity oil. Well No. 2 on section 12, 19-15, is 2,935 feet deep with 8¼-inch casing, free in the hole; will cement off the water at about 3,000 feet and go into the oil sand with the 6¼-inch casing. This depth on the East Side indicates a very light oil, about 23 degrees to 28 degrees gravity. On section 12, 20-14, there are 10 wells producing; this property is the "Home Camp" of the Company and is very thoroughly equipped with buildings, shops, storage and shipping tanks.

COALINGA BRITISH OIL CORPORATION, LTD.

The Coalinga British Oil Corporation, Limited, owns in fee 80 acres in the West Side field, formerly the holdings of the Wabash. The company is now drilling two wells; have 17 wells producing, making a fair production. This is not deep territory, consequently not expensive to operate in drilling. The property is well housed, has two good boiler plants, storage and shipping tanks. Clarence B. Wisner is general manager.

BRITISH CALIFORNIA OIL CORPORATION, LTD.

The British California Oil Corporation, Limited, are drilling well No. 1 on the west side of section 16, 20-15, and are now 3,400 feet deep, having drilled to this depth with a rotary rig; the Company is now changing over to standard tools and will complete the well with the cable tools. The casing is 8¼ inches and the Superintendent will try to shut off the water at 3,700 feet. The Company has a very complete camp, comfortable and neat buildings for the help, good boiler plant, everything staple, solid and complete.

CANADIAN COALINGA OIL COMPANY.

The Canadian Coalinga Oil Company is drilling well No. 1 with a rotary on the southwest quarter of section 8, 21-15, starting with an 18-inch hole, which is now 250 feet deep. The formation will be the same as that of the Boychester, on section 18, 21-15. The hole will be carried to about 1,800 feet with the rotary and the well will be completed with standard tools. The company has a very complete camp, neat and comfortable, and two 70 horsepower boilers well bricked in.

VANCOUVER COALINGA OIL COMPANY.

The Vancouver Coalinga Oil Company has completed a very heavy standard rig on the northeast quarter of section 14, 20-15, and will spud in this week. "Jim" Walp and "Jack" Cypher have been engaged to conduct the drilling; both men are experienced deep well drillers in this field. The camp is complete with comfortable buildings, two 70 horsepower boilers well set up in brick.

WILL NOT LIFT DUTY ON ASPHALTUM.

Representative Henry's Bill to Receive No Consideration.

California asphalt men and oil men need not fear the Henry bill, known as H. R. 28,619, because Senators Flint and Perkins and Representatives Needham, Hayes and Kahn have expressed either their opposition to such bill or their beliefs that it will not even be considered this session of Congress. The bill, if it could by any possibility be passed, would be disastrous to California's asphalt industry, as it would admit asphalt free. Following is the bill:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled. That as much of paragraph ninety of an Act entitled "An Act to provide revenue, equalize duties, and encourage the industries of the United States, and for other purposes," as pertains to asphaltum and bitumen, crude, if not dried, or otherwise advanced in any manner, be, and the same is hereby, repealed.

Sec. 2. That asphaltum and bitumen, crude, if not dried or otherwise advanced in any manner, be transferred to the free list, and that same may be hereafter imported into the United States from any foreign country free and exempt from duty.

TEMPLOR-McKITTRICK OIL COMPANY.

The management of the Templor-McKittrick Oil Company gave us a report from their field superintendent recently showing the following: Well No. 2 on the Sunset property continues flow and company has a good amount of oil in the sump hole. In a short time a spur from the railroad track will be laid to the property so that oil may be shipped regularly. Ordinary work is progressing. A derrick is now in process of erection over well No. 1 and the company expects to have this well on production again in a short time.

Honolulu Consolidated Gets Another Big Well.

News from Taft, Cal., is to the effect that the Honolulu Consolidated Oil Company has brought in a large well on the northwest quarter of the northeast quarter of section 14, 32-23, Midway, and that the oil is of a high gravity. The oil was struck at a depth of 3100 feet, when the rotary bit into a formation surcharged with gas and the oil came rushing up through the casing. Mud was immediately forced into the well and a blowout preventer was used, but nevertheless the oil forced its way through. The Honolulu has really had a phenomenal success, bringing in one of the first gushers in the Midway, which was remarkable before it became an oil gusher for the quantities of gas which it threw off. Superintendent J. A. Pollard, who well knows how to "repel boarders" and who gained the title "the fighting superintendent" is in charge of the Honolulu's operations. He is fully capable of caring for the well.

Lakeview Gusher Meets Watery End.

The Lakeview gusher has at last met its master—water. This phenomenal well, the wonder of the world and probably the greatest producer ever known, has now come down in production to an output of between 8000 and 9000 barrels of an emulsion of water, oil and mud, mostly water and mud. The exact percentage of water and mud is said to be about 64 per cent at present, with a daily increase. The present production is being run into the 8000-barrel reservoir prepared for a different output than that which is now flowing into it. It is hoped by the company that the water and impurities will settle to the bottom and leave the oil free on the surface. The Lakeview's history is so well known that we need hardly recount it. The well came in on March 15, 1910, and has flowed about 9,500,000 barrel of oil in the 300 days since. All the producers in the State excepting probably the Standard Oil Company, are pleased to hear of the Lakeview's decease.

Sunset National Goes Under.

The Sunset National Oil Company, located on the Maricopa Flat, and owned principally by labor union men, was forced into bankruptcy on the 11th inst., with liabilities estimated at between $10,000 and $15,000 and assets at nil. Lack of capital is said to have been the cause. Another cause is that those engaged in promoting the company were not thoroughly familiar with the oil business, according to reports. About 400 laboring men were interested in the concern and general regret is expressed at its failure. It is a noticeable fact, however, that almost all of the recent successes in the oil business have gone to old-time operators.

P. D., or Santa Fe, Will Erect Topping Plant.

The Santa Fe is to have a topping plant with a regular daily capacity of 3000 barrels, to be located on section 6, 2-23, which is to be installed in the near future. It is stated in the *Oil World* that the plant is for the purpose of taking the tops off the light oils produced in the Midway and that the residuum will be used in the locomotives of the railroad.

Templor Field Looking Up.

The fact that Templor has at last succeeded in marketing or removing between 15,000 and 20,000 barrels of oil has given an additional stimulous to the field lately, other than the general hopeful outlook. The Templor Ranch Oil Company and California King are the shippers from this district. Templor Ranch has had its oil in storage for a long time; needless to say the management is pleased with the present conditions. Templor Ranch is the pioneer here and has a number of good wells all pumped with air. Dillon and Shear Petroleum are in good condition; California King is doing nicely. The Sunshine Oil Company is now about to drill and the Argue will continue drilling with a rotary.

LaBlanc's Oil Brings Good Price.

The LaBlanc Oil Company's well No. 1, on section 6, 12-23, Maricopa, produced approximately 3000 barrels of oil during December and sold most of it to nearby leases for 65 cents per barrel, which is a good price. No. 1 is 2264 feet deep and was finished with a small casing and two-inch tubing. It is capable of pumping 250 barrels per day but has trouble with sand. The company's well No. 3, which, by the way, is its second well, is down 1390 feet with ten-inch casing and is in excellent condition. This well is expected to strike the sands at about 1900 feet.

Standard Oil Company's Well Blazes.

Standard Oil Company's well No. 9 on section 30, 32-24, Midway, caught fire recently and blazed furiously for several days. The well was a large producer, being good for 3500 to 4000 barrel per day. About 20,000 barrels of oil and the derrick was consumed. The fire was conquered only when the well sanded up and stopped the flow of oil and gas sufficiently to allow a stream of steam to suffocate it.

Amber Oil Company Increases Output.

The output of well No. 1 of the Amber Oil Company, at Fellows, is now making 250 barrels of oil whereas it used to make but 50 barrels. This increase is due, it is said, to the fact that the oil is now flowing through the perforations in the ten-inch casing while it formerly came through an eight-inch casing.

Midway Premier Flowing 1800 Barrels Daily.

The Midway Premier Oil Company's gusher, which recently ceased to flow because sanded, is again at work producing about 1800 barrels daily. The oil is high grade, testing between 24.5 and 26.5 degrees gravity, Beaume. The Standard Oil Company had taken 125,000 barrels of oil from this one well on January 1 at a price said to be 40 cents per barrel. The oil is sold on daily runs. The company is drilling several other wells to offset those of neighboring leases, particularly that of the Midway Five Oil Company, whose gusher was noted in our last issue.

Broncho Oil Company Gets Well.

The Broncho Oil Company, operating on section 9, 11-23, Maricopa, has brought in a well at 2330 feet which produces 17 gravity oil. Size of well not reported but thought medium.

Rock Oil Company's Well Flowing Again.

A serious fire occurred on the Rock Oil Company's lease,

section 24, 31-22, Midway, during the latter part of last month, when well No. 1, a gusher, broke into flames started by a spark blown from the furnace into the sump. The rig, quite a large amount of oil, and the loss of oil while the well was burning as well as the expense incurred for conquering the blaze constitute the extent of the company's setback. The fire was quenched after a hard fight only, the extinction of the blaze being accomplished by means of chemicals. The well is again flowing 800 barrels of oil per day.

"Capitalists" Visit Oil Fields.

Early in the month the State was visited by eighteen bankers, financial agents and oil experts from New York and Pennsylvania, said to represent a huge fortune collectively. They came under the direction of John S. Merrill, whom the *Chronicle* says is a "widely known oil expert and capitalist of New York City."

Dawson Oil Company Formed.

Persons interested in the Midway Five Oil Company, the property of which borders on the Midway Premier Oil Company's land, have formed the Dawson Oil Company, capitalized for $500,000. The new company was incorporated in Arizona. The officers are: B. X. Dawson, president; F. M. Cook, vice-president; V. D. Black, superintendent; L. De Sallier. The company, it is said, will drill on section 6, 11-23, Maricopa, close to the LaBlanc, Lady Washington, Essex and Yellowstone companies. The exact location of their property has not yet been given out.

Pacific Midway Flows 500 Barrels.

The Pacific Midway, on the Maricopa Flat, southwest quarter of section 32, 12-23, was reported flowing between the casing at the rate of 500 barrels daily, steadily, during the latter part of December. Late news not given. Pacific Midway Company is a member of the Independent Agency.

LADY WASHINGTON OIL COMPANY

The Lady Washington's well on the Maricopa Flat, section 6, is down 2600 feet; it is proving considerably deeper territory than had been thought. Several promising oil sands have been passed through and it is now believed that the drill is only a little above the main sand. Work progressing nicely.

MADISON OIL COMPANY.

Madison Oil Company news will certainly gladden its stockholders when known. The company is now shipping regularly from its Kern River lease and its outlook is very hopeful.

JEWELL SHIPPING ITS OIL.

The Jewell Oil Company in the Kern River field, is making shipments as fast as the Agency will take the oil. The management expects that the production will be materially increased by the end of the present month. No further news.

Exports of Mineral Oils From San Francisco During Month of December, 1910.

	Quantities Gallons	Values Dollars	Twelve Months ending December Gallons	Dollars
Crude	5,713,804	81,752	62,621,932	920,016
Napthas	6,462	1,376	83,520	17,042
Illuminating	2,831,154	105,298	30,256,304	1,193,010
Lubricating and Parrafin	35,579	9,958	533,665	129,424
Residum	627	44	2,230,680	40,186.
Total Mineral Oils	8,587,626	198,428	95,726,101	2,299,678

SANTA MARIA

PALMER OIL COMPANY.

The Palmer Oil Company is building a rig on the extreme north line of their Stendel tract, just a half mile south of the Cat Canyon Oil Company's well. It is the belief of their field superintendent, Mr. Frank Fether, that this portion of their property contains the highest grade oil. Well No. 1 is producing 1650 barrels per day; No. 2 is sanding freely and producing between 300 and 400 barrels daily; No. 3 is acting similarly; No. 4 is doing approximately 350 barrels.

ORO WATER, LIGHT & POWER WILL DRILL.

The Oro Water, Light & Power Company are preparing to drill on their Cat Canyon tract immediately adjoining the Stendel property of the Palmer Oil Company.

PRINCESS OIL COMPANY.

The Princess Oil Company are down 1820 feet in their No. 1 well in the extreme south end of the Santa Maria field; have cemented off the water. An excellent showing of oil sand was encountered at 1320 feet and the prospects are very good for a big producer. Princess No. 2, on the Tunnell tract, about three miles east of Cat Canyon, are down over 900 feet with a good showing.

LOS ALAMOS SOLD.

The property of the Los Alamos Petroleum Company, consisting of a 40-acre lease on the Rossi tract, has been sold to Los Angeles capitalists for the highest price on record, in this field, $6250 per acre. The company has one well, good for as high as 2000 barrels daily, and will start another immediately.

A three-fifths interest only was purchased, according to reliable authority.

WESTERN UNION NOTES.

Western Union well No. 44 was finished recently and placed upon the pump; production not yet reported. The company is now running four rigs and preparing to start a fifth.

UNION, PINAL, CALIFORNIA COAST, BROOKSHIRE, NEW PENNSYLVANIA, AND COBLENTZ NOTES.

The Union Oil Company operates on the Kaiser, Squires, Newlove, Folsom, Fox, Hobbs, Hartnell and Arrellanes leases. It produces the bulk of the oil coming from this field, having something like 285,000 barrels a month. It has about 80 wells, but many of these are closed down on account of sand troubles. Several drilling wells are suspended; two or three strings at work.

The California Coast Oil Company has one drilling 1300 feet; from nine wells its production amounts to 42,500 barrels a month.

Of the Pinal's three drilling, two are suspended; deepening two old wells; has a production of 39,000 barrels a month from 25 wells. The Dome Oil Company had 13 producing and four shut in; it puts out 29,000 barrels and better every month.

The Brookshire Oil Company is drilling and was 3775 feet deep; it produces 13,700 barrels during the month from six wells.

The New Pennsylvania Oil Company is deepening one; has five producing 12,000 a month.

The Coblentz is drilling 3220 feet; Radium, 2145 feet. In the field there are 13 drilling wells suspended and 11 drilling.

By far the most important event in the Santa Maria Oil District during the last month was the organization of the Palmer Union Oil Company, which consists of the Palmer Junior Oil Company, Palmer Senior Oil Company, both in the Santa Maria field, and the Paula Oil Company, the holdings of which are located in the Ventura and Midway oilfields. The new corporation is capitalized for $6,000,000, with a working capital of $3,000,000. The par value of the shares is $1.00 each. The company owns 1800 acres in the Santa Maria field and 120 acres in Ventura, also a lease on 400 acres in Ventura, and a 40-acre lease in the Midway field. The company have several producing wells with a contract for the sale of their oil. The officers and directors consist of the following well known oil operators: Frank L. Brown, president; J. C. Kemp Van Ee, first vice-president; Lewis A. Hilborn, second vice-president; C. Jepsen, secretary; Gustave Bauman, Chas. E. Ladd and P. F. Unger. Palmer Union No. 1 is now down 2810 feet; No. 2 is down 1020 feet, and No. 3 has just spudded in.

RECENT PATENTS.

The following recent patents of interest to the oil trade are reported expressly for *The California Derrick* by J. M. Nesbit, Patent Attorney, Park Building, Pittsburg, Pa., from whom printed copies may be procured for 15 cents each:

Rope knife, A. C. Graham, Oilfields, Cal., 978,577.

Cementing wells, A. S. Cooper, Los Olivos, Cal., 978,359.

Well boring machine, S. H. Coleman, Villisca, Iowa, 978,699.

Gravity valve cage and valve for pumps, J. B. Garber, Salem, Ohio, assignor to the Deming Company, same place, 978,729.

Under-reamer, J. C. Swan, Marietta, Ohio, 979,106.

Well drilling derrick, W. D. Deschamp, Fort Smith, Ark., and G. C. Jones, McAlester, Okla., 979,133.

Derrick bull wheel, A. M. Kruger, Duluth, Minn., 979,173.

Casing spear, C. C. Heeter, Butler, Pa., 976,651.

Well drilling device, J. S. Stewart, Houston, Tex., 974,305.

Pump for oil and like wells, C. W. Bell, Bartlesville, Okla., 974,342.

Well hook, Arthur Soss, Bee, Neb., 974,533.

Electric fishing tool, Harry Eastwood, Fresno, Cal., 974,760.

Pump, C. M. Smith, Los Angeles, Cal., 974,837.

Earth drill, J. D. Coplen, Globe, Ariz., 976,020.

Process for drilling and cementing wells, W. W. Pedder, Los Angeles, Cal., 975,065.

Well screen (2), H. R. Decker, Houston, Tex., 975,333 and 975,334.

Deep well pump, John Hahn, Los Angeles, Cal., 976,071.

Well pumping mechanism, W. T. Gray, El Campo, Tex., assignor to El Campo Machine Co., 976,565.

Well packed, William Hemme, Altoona, Kans., 976,737.

Elevator for sucker rods, A. R. Peters, Ochelata, Okla., 976,910.

Method of combustion of oil and gas mixtures, Hudson Maxim, New York, 977,208.

Tool dropping apparatus for drills, Hezekiah Kirk, Yorkville, W. Va., 977,409.

Pump plunger, O. J. Keller, Los Angeles, Cal., 977,881.

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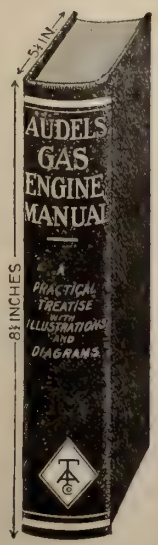
Gas Engine Manual



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BIG SESPE OIL COMPANY, BARD OIL & ASPHALT, NATIONAL VENTURA OIL COMPANY, AND SANTA CLARA OIL & DEVELOPMENT CO.

The Bib Sespe, in the Big Sespe District, is now down about 525 feet with well No. 6, and is cleaning out well No. 2. The Bard, in the Upper Ojai region, is down 1000 feet with well No. 32 and will shortly cement four wells with a newly-installed pumping jack. The National Ventura, section 19, 4-20, Santa Paula field, is preparing to erect its first derrick. The Santa Clara Oil & Development Company is down 130 feet with a 17-inch hole on section 13, 4-21.

VENTURA OIL DEVELOPMENT COMPANY, GATES OIL COMPANY, AND CANADA WEST OIL COMPANY.

Manager W. C. Daniels reports that well No. 1 of the Ventura Oil Development Company has passed through two oil formations and is in shale at present. Gates well No. 1 is down 900 feet and more in a hard oil and gas-bearing sand. The Canada West Oil Company, in the Upper Ojai, has shut off the water at 850 feet.

LOS ANGELES QUOTATIONS.

(Not Quoted on San Francisco Stock Exchange.)

	Bid.	Asked.
American Crude Oil	.....	.75
Central Oil	1.82	.....
Continental	.....	.35
Fullerton Oil	3.25	5.00
Mexican Pet. Ltd. (pfd)	67.75	68.00
Mexican Pet. Ltd. (com)	35.00	.....
Olinda Land	.....	.57
Perseus	.....	.20
Section Six Oil	.....	.50
Piru Oil and Land Co.	.20	.....
Union Provident	99.50	100.00
Union Provident	99.50	100.00

LATEST QUOTATIONS ON SAN FRANCISCO AND LOS ANGELES STOCK EXCHANGES AND DIVIDENDS FOR MONTH ENDING DECEMBER 31, 1910.

Following are given the latest price quotations, bid and asked, upon the stock exchanges of both San Francisco and Los Angeles, of all listed stocks excepting those which have not been exchanging hands recently. The number of dividends paid, the date, amount per share, and total disbursement to date of every listed company in California (when such disbursements have been made public) follow on the same line:

	Closed.		Dividends.			
Company—	Bid.	Asked.	No.	Date.	Amt. pr. Share.	Total to Date.
Alma Oil Co.	.....	1.00	17	12 15 10	.03	193,800
Amalgamated Oil Co.	....	.....	32	9 15 10	1.00	1,600,000
American Petroleum (pfd.)	.....	90.00	18	12 1 10	.66	308,670.60
American Petroleum (com.)	50.00	58.00	18	12 1 10	.66	1,718,607.10
Amy	.85	.....	..	.....	....	.....
Apollo	.07	.10	2	3 20 05	.01	4,000
Associated Oil Stock	48.62½	49.00	4	3 1 07	1.50	1,548,368.54
Associated Oil Bonds 5s	98.00	100.00	..	.....	....	.....
Bay City	.....	.....	8	10 15 10	.10	155,000
Blue Moon	.....	.08	..	.....	....	.....
Brookshire	.....	1.30	45	1 1 10	.01	442,500
California Midway	.52	.53	..	.....	....	.....
California Oil & Gas	.....	.65	..	.....	....	.....
California Seaboard Oil Co.	.....	.25	..	.....	....	.....
Caribou Oil & Mining Co.	.....	1.25	68	12 15 10	.02½	882,113.49
Claremont	1.15	1.25	67	12 28 10	.02	415,000
Coalinga Central	.....	.40	..	.....	....	.....
Coalinga Mohawk	1.00	1.10	..	.....	....	.....
Coalinga National	.22	.....	..	.....	....	.....
Coalinga Pacific	.....	.....	18	12 23 09	.10	107,250
Columbia	1.01	.....	56&57	12 25 10	½&½	454,730.45
Cons Midway	.18	.20	..	.....	....	.....
Cresceus	.....	.60	..	.....	....	.....
Dabney	.....	.10	..	.....	....	.....
Del Rey	.....	.20	5	9 1 10	.00½	19,637.50
De Luxe	1.30	.....	..	.....	....	.....
Dominion Oil Co.	.....	.80	..	.....	....	.....
Empire	.....	2.75	8	12 1 10	.01	16,000
Enos	.68	.....	..	.....	....	.....
Esperanza	.....	.....	26	12 27 09	.02	49,450
Euclid	.....	.65	42	8 1 10	.01	141,500
Four Oil	.....	.06	68	2 25 10	.01	213,000
Fulton	.....	1.25	..	.....	....	.....
Globe	.05	.05	22	10 1 10	.01	93,000
Graciosa	.....	.50	..	.....	....	.....
Gypsy	.....	.45	4	8 4 10	.07	40,000
Home	.....	.....	A26	12 20 10	.02	492,000
Homestake	.....	.....	49	12 13 10	.10	81,250
Illinois Crude	.24	.....	40	6 1 10	.01	94,000
Imperial	.....	.....	71	7 18 10	8.00	4,000,000
Jade Oil Co.	.....	.....	..	.....	....	.....
Junction	.25	.....	8	6 1 09	.01	20,000
Kern River	).....	8.00	49	12 1 10	.10	118,000
Linda Vista	.....	.....	23	10 19 10	.01	84,447

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Lucile	.....	12.50	16	12 20 09	.10	42,727.04
Mascot	2.00	3.00	11	12 20 10	.04	100,000
Maricopa National	.26	.....	..	.....	....	.....
Maricopa 36	2.22½	.....	..	.....	....	.....
McKittrick	.15	.20	..	.....	....	.....
Mecca	.....	.....	6	7 15 09	.03	71,825
Monte Cristo	2.47½	2.55	68	12 20 10	.10	840,000
Mountain Girl	.....	.....	1	8 4 10	.02	7,000
Mexican Petroleum	.....	.....	52	12 1 10	.01 1-3	3,762,578.97
Nevada County	.15	.....	3	10 13 08	.04	40,000
Nevada Midway	.16	.....	..	.....	....	.....
New Penn. Petroleum	.48	.51	7	12 15 10	.01	32,500
Occidental	.15	.....	..	.....	....	.....
Pacific States	.25	.30	..	.....	....	.....
Palmer	1.60	1.62½	19	12 25 10	.01	412,541.50
Parraffine	.73	.75	14	12 15 10	.01	42,000
Peerless	.....	4.50	77	9 20 09	.06	801,000
Piedmont	.10	15	7	5 9 10	.01	26,877.30
Pinal	.....	6.25	62	10 30 10	.10	991,835.50
Premier	.73	.75	4	7 20 10	.01	40,000
Producers	.....	.....	2	9 22 10	.50	120,000
Record	4.50	5.00	18	12 15 10	.07½	122,500
Republic	.45	.50	..	.....	....	.....
Rice Ranch	.....	.....	22	10 10 10	.03	117,000
Sacramento	1.00	.....	..	.....	....	.....
S. F. & McKittrick	11.00	.....	31	11 1 10	.30	460,000
Sauer Dough	.....	2.00	58	12 21 10	.03	569,173.50
Section 25	25.00	30.00	10	12 26 10	.25	100,000
Sesnon	8.00	.....	14	11 6 10	.05	157,000
Shawmut	.....	.50	..	.....	....	.....
Silver Tip	1.25	1.40	4	2 25 10	.10	30,000
Sovereign	.....	.17	19	9 1 10	.01	100,000
S. W. & B.	.35	.40	7	9 10 09	.01	41,470
Sterling	2.15	2.25	23	3 15 10	.12½	776,250
Sunset Monarch	.....	2.00	..	.....	....	.....
Superior	.....	.15	13	12 26 10	.01	67,500
Thirty-Three	.....	.....	60	8 6 10	4.00	1,090,000
Traders	.....	.....	17	5 15 10	1.00	209,146.50
Turner	1.00	1.25	..	.....	....	.....
United Petroleum	.....	.....	112	12 20 10	.50	2,542,339.43
Union	101.50	101.75	173	12 20 10	.50	7,491,612.15
United Oil	.70	.74	7	12 10 10	.01	85,755.17
West Coast (pfrd)	.....	.....	6	9 1 10	2.00	124,896
West Shore	.....	.....	47	12 21 08	.05	235,000
Wolverine	.40	.....	..	.....	....	.....
W. K. Oil	2.40	2.50	..	.....	....	.....
Western Union	.....	100.00	..	8 21 07	2.00	484,951
Yellowstone	.....	.25	1	5 08	.01	8,000
Storage Certificates	.34	.35	..	.....	....	.....

Total Dividends Paid to Date	$$37,298,276.92
Total Dividends Paid by the Above Companies for December, 1910	539,580.70
Dividends paid by former listed companies since absorbed or sold	1,998,136.12

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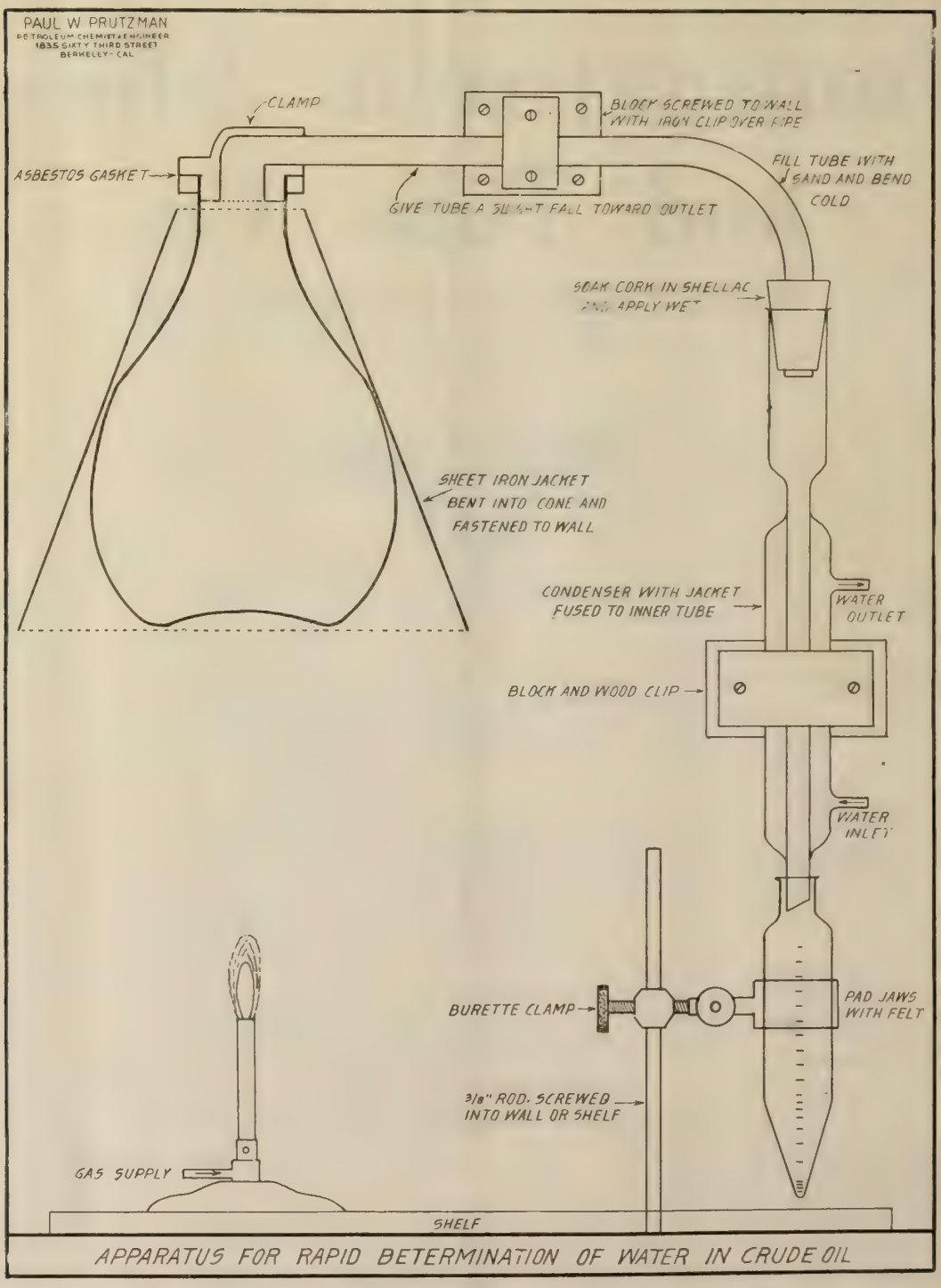
Diagram drawn by PAUL W. PRUTZMAN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1835 SIXTY THIRD STREET
BERKELEY - CAL
CLAMP
BLOCK SCREWED TO WALL WITH IRON CLIP OVER PIPE
ASBESTOS GASKET
FILL TUBE WITH SAND AND BEND COLD
GIVE TUBE A SLIGHT FALL TOWARD OUTLET
SOAK CORK IN SHELLAC AND APPLY WET
SHEET IRON JACKET BENT INTO CONE AND FASTENED TO WALL
CONDENSER WITH JACKET FUSED TO INNER TUBE
WATER OUTLET
BLOCK AND WOOD CLIP
WATER INLET
BURETTE CLAMP
PAD JAWS WITH FELT
3/8" ROD, SCREWED INTO WALL OR SHELF
GAS SUPPLY
SHELF
APPARATUS FOR RAPID DETERMINATION OF WATER IN CRUDE OIL

Illustrating his article "The Determination of Water in Oil". (see opposite page)

CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 3 | San Francisco, Cal., February, 1910 | No. 9

Distillation Test for Water in Petroleum.

A PROCESS DESCRIBED

By Paul W. Prutzman, Geologist Chemist and Author

Noticing in the December issue of the *Derrick*, Professor Edmund O'Neill's valuable and interesting paper on "Water and Sediment in Petroleum," I take the liberty of extending somewhat his remarks on the distillation test for water, offering my apologies for trespassing on his subject.

Some years since I modified the test then in use to fit it to the needs of my own work, and found the results so satisfactory that I have since used it in every case where the contract did not specify method of testing. Several hundred tests have been made by this method, with uniformly satisfactory results, and I also applied it extensively to the coal tars, many of which contain large amounts of water, and cannot be handled at all by any of the other methods.

APPARATUS.—A copper bulb, known in the trade as an oxygen retort, one-pint size, with the outlet tube bent as shown, and supported by a wall clamp. To the outlet a straight tubular condenser is adapted by a cork, which should be shellacked inside and out, and put in place wet. Between collar of retort and still-head is placed an asbestos gasket, which should be well filled with graphite grease when first put in place, and will then answer for several runs.

Around the bulb of retort is placed a sheet iron jacket, which is supported by a bracket from the wall. It will be understood that in putting the bulb of retort in place, this is inserted from below, and the clamp applied above the jacket.

No thermometer is required. An ordinary bunsen burner is used for heating, or an alcohol lamp, where no gas is to be had.

REAGENTS.—But one is required, a mixture of coal tar benzene (C_6H_6) and toluene—the ordinary painter's benzine made from petroleum will not answer. The reagent may be had of the wholesale druggists, and should be chemically pure and water white. A pound of each may be mixed in a large bottle, and where very accurate results are required, a spoonful of water added. These bodies absorb a slight trace of water, and if used dry will disturb a very delicate test, but for ordinary work this error may be disregarded. If used, ordinary care must of course be taken to avoid pouring any drops of water when measuring out the quantities, but as the water is much heavier than the benzene mixture, and settles perfectly clean, this is a very simple matter.

TEST.—Fifty cubic centimeters of the oil are accurately weighed or measured (the usual precautions must be taken to get an average sample, but as these are common to all tests, they need not be detailed here) and poured into retort bulb. Fifty cubic centimeters of the benzene mixture is then measured out, roughly, and used to rinse the last of the oil into the retort—as oil is extremely soluble in this mixture, this quantity will suffice to transfer the last trace of oil to the retort, and leave the measuring vessels clean for the next test.

Retort is then attached to neck and clamped tight. Place the burner about twelve inches below the retort, and turn flame up to about two inches height. This will vary considerably with the quality of the gas, but after two or three runs have been made the operator will learn just what size flame to use, and how far below retort to place it. Start water flowing through condenser, and use a tapered centrifuge tube as a receiver. Distillation will soon start, and a mixture of benzene and water come over. When the water is

exhausted almost pure toluene will run for a time, which sweeps any drops of condensed water out of retort neck and condenser, carrying all water into the receiver and leaving condenser clean for the next run. It is best to run off about forty cubic centimeters of the spirit, in addition to whatever water may be given off.

When flame is turned off, the retort is unclamped and emptied, a new receiver is put in place, and the apparatus is then ready for another run. No cleaning of still or condenser is necessary. The benzene mixture, as soon as the water has settled out and been read, can be poured back into the stock bottle and used again.

When freshly run, the water in receiver is often partly suspended in the benzene mixture, giving it a milky or cloudy appearance. It should be allowed to stand until perfectly clear, which will be in from half an hour to two hours. The volume of water is then read off and calculated in the usual manner—1/10 cubic centimeter of water is equal to 2/10 per cent of water, when a fifty-cubic centimeter sample is taken.

With oils very badly emulsified (red oils) or where the percentage of water runs very high, it is sometimes advisable to use double the quantity of the benzene mixture, and to use a two-pint instead of one-pint bulb. The different size bulbs fit the same head, so that no change in the apparatus is necessary.

ADVANTAGES.—I claim for this method the following advantages:

The cost of the entire apparatus is between three and four dollars, and no power is required.

After a very little skill is gained, tests can easily be made at the rate of one in twenty minutes, where a number are made successively, or a single test in about thirty-five minutes. Almost no attention is required, except in measuring out the sample.

The results are highly accurate, and are not disturbed by slight variations in the solvent mixture or in manipulation. If the same is properly measured, and distillation continued long enough, all the water will be brought over, and close checks may be had. On account of the extreme solubility of petroleum in benzene and toluene, and the low boiling point of benzene, there is no danger of samples foaming over.

The proportion of the two solvents noted above should not be materially altered, and I would advise against the attempt to substitute other solvents for those named. I have tried out thoroughly all the organic solvents which may be had at any reasonable price, and these give results far superior to any others which were used.

The proportion of water shown by this test is usually somewhat higher than is given by any of the centrifuge tests. I understand, of course, that for commercial purposes, the usual gasoline, or gasoline-bisulfid test is firmly established by usage, but for scientific purposes, or for use by oil producers for their own guidance, this method will, I think, be found to have some very material advantages. It should be noted that this process does not determine the sand, but water only. Sand can be determined in the residue left in retort, or on a fresh sample, by solution in the benzene mixture, filtering, washing and weighing. In these days a determination of sand is seldom necessary, except in testing the raw product from new wells, and in such cases it should by all means be estimated separately from the water.

PRESIDENT WITHDRAWS LANDS IN KETTLEMAN HILLS.

The following letter from President Taft, withdrawing lands herein described, has been received by the Register and Receiver of the United States Land Office at Visalia, Cal.:

Department of the Interior, General Land Office, Washington, January 3, 1911.—Order of Withdrawal, Petroleum Reserve No. 16, California, No. 7.

Register and Receiver, Visalia, California, Sirs: You are advised that by order of the President, dated December 30, 1910, the following described lands were withdrawn from settlement, location, sale or entry and reserved for classification, and in aid of legislation affecting the use and disposal of petroleum lands belonging to the United States, subject to all of the provisions, limitations, exceptions and conditions in the act of Congress entitled "An Act to authorize the President of the United States to make withdrawals of public lands in certain cases," approved June 25, 1910 (36 Stat. 847).

You will make the following notations opposite each tract designated herein: "Petroleum Reserve No. 16, California No. 7, Ex. Order Dec. 30, 1910," and give publicity to the order by furnishing copies to such newspapers in your district as may desire the same for publication without cost to the Government.

Mt. Diablo Meridian.

In Township 20 S., Range 16 E.—Southwest quarter of section 25;

All of section 26:

East half of section 34;

All of sections 35 and 36.

In Township 21 S., Range 16 E.—All in sections 1 and 2;

South half of section 3;

North half of northwest quarter, southeast quarter of northwest quarter, northeast quarter of southwest quarter and southeast quarter of section 4;

North half of northeast quarter, southeast quarter of northeast quarter, northeast quarter of southeast quarter of section 9.

All of sections 10, 11, 12, 13 and 14;

Northeast quarter, north half of northwest quarter, southeast quarter of northwest quarter, north half of southeast quarter, southeast quarter of southeast quarter of section 15;

Northeast quarter, north half of northwest quarter, southeast quarter of northwest quarter, north half of southeast quarter, southeast quarter or southeast quarter of section 23.

All of section 24.

Northeast quarter, north half of northwest quarter, southeast quarter of northwest quarter, north half of southeast quarter, southeast quarter of southeast quarter of section 25.

In Township 20 S., Range 17 E.—Southwest quarter of section 31.

In Township 21 S., Range 17 E.—All of sections 6 7 and 8.

West half of northwest quarter and southwest quarter of section 16.

All of sections 17, 18, 19 and 20.

West half of northeast quarter, west half, west half of southeast quarter, southeast quarter of southeast quarter of section 21.

Southwest quarter of southwest quarter of section 26.

West half of northwest quarter, southeast quarter of northwest quarter and south half of section 27.

All of sections 28, 29 and 30.

Northeast quarter, north half of northwest quarter, southeast quarter of northwest quarter, north half of southeast quarter of section 31.

North half, north half of southwest quarter and southeast quarter of section 32.

In Township 22 S., Range 17 E.—Northwest quarter and east half of southwest quarter of section 4.

S. V. PROUDFIT,
Assistant Commissioner.

Board of Law Review,
By W. B. Pugh.

California Derrick's Complete Statistical Record Showing Production of and Operations in Each Field During Year 1910

CALIFORNIA'S DERRICK'S COMPLETE STATISTICAL RECORD SHOWING PRODUCTION OF AND OPERATIONS IN EACH FIELD DURING YEAR 1910.

Following are Standard Oil's figures showing the rigs and wells completed, wells abandoned, and production of each district during entire year:

Field	Rigs Comp.	Wells Comp.	Wells Ab.	Prod. for 1910.
Kern River	362	301	31	14,776,435
McKittrick	169	54	8	5,471,613
Midway	584	238	17	11,174,207
Sunset	180	79	4	9,218,904
Coalinga	278	218	4	18,651,470
Watsonville	1	...	..	36,660
Arroyo Grande	1	1	4	22,310
Lompoc	10	6	..	698,210
Santa Maria	33	20	3	6,909,620
Summerland	2	2	1	74,725
Santa Paula	56	19	19	492,147
Newhall	8	9	6	160,428
Salt Lake	33	37	3	3,263,104
Los Angeles	...	...	35	466,514
Whittier-Coyote	19	6	4	1,198,260
Puente	2	2	..	38,960
Fullerton-Brea Canon	41	23	2	5,044,001
Repetto	2	...	..	.....
	1781	1015	141	77,697,568

CALIFORNIA DERRICK'S COMPLETE RECORD SHOWING OIL PRODUCTION, CONSUMPTION AND SURPLUS IN BARRELS, MONTH BY MONTH.

Following are Standard Oil's figures showing the monthly production, consumption and surplus of California oil during year 1910. It must be borne in mind that these figures include losses by fire, and by seepage, and also a shortage of 558,412 barrels from the surplus, in February last, when that amount was drawn from stocks:

Month	Production	Consumption	Surplus
January	5,183,150	5,097,559	85,591
February	4,875,711	5,434,123	558,412
March	6,022,624	5,679,479	343,145
April	6,580,510	5,445,243	1,135,267
May	6,995,825	5,424,812	1,571,013
June	7,126,544	5,306,156	1,820,388
July	7,207,890	5,542,908	1,664,982
August	7,368,320	5,530,120	1,838,200
September	6,858,028	5,323,129	1,534,899
October	6,552,281	5,704,981	847,300
November	6,323,189	5,714,706	608,483
December	6,603,496	5,969,157	634,339
	77,697,568	66,172,373	11,525,195

PRODUCTION FOR DECEMBER, 1910, IN DETAIL.

As was estimated in the January number of the *California Derrick* the production of oil in the State during December did not diminish but increased, even exceeding our figure, the exact amount produced being given as 6,603,496 barrels; and the increase being 280,307 barrels of oil, over the November production. This increase is practically the result of time only; the thirty-first day of December almost made the difference in the production. While there was an increase in production for the month, there was also a goodly increase in consumption, amounting on the face of the figures returned to approximately 500,000 barrels of oil.

Following is our regular detailed monthly statement, giving field, wells producing, total production, consumption and stocks during and at the end of December, 1910:

	Total wells Producing.	Total production for month.
Kern River	1566	1,244,650
McKittrick	189	525,634
Midway	318	1,208,690
Sunset	138	512,554
Coalinga	733	1,612,220
Watsonville	3	2,170
Arroyo Grande	6	4,000
Lompoc	20	77,500
Santa Maria	149	553,800
Summerland	134	5,900
Santa Paula	250	43,385
Newhall	77	15,007
Salt Lake	261	252,911
Los Angeles	416	36,917
Whittier-Coyote	140	96,838
Puente	55	3,100
Fullerton-Brea Canon	237	408,220
Total	4692	6,603,496
		Barrels
Consumed, December, 1910		5,969,157
Stored, December, 1910		634,339
Average daily surplus		20,462½
Average daily production		213,016
Average daily consumption		192,553

FIELD OPERATIONS DURING DECEMBER, 1910, IN DETAIL.

Following are the field operations during December, as given out by the report of the Standard Oil Company:

Field	Rigs Comp.	Wells Drg.	Wells Comp.	Wells Abd.
Kern River	13	35	13	..
McKittrick	2	14	1	..
Midway	31	227	22	6
Sunset	16	49	8	..
Coalinga	15	149	14	..
Watsonville	..	2	..	..

Arroyo Grande	..	2	..	..
Lompoc	..	7	..	..
Santa Maria	2	41	1	3
Summerland	..	2	..	..
Santa Paula	3	34	2	..
Newhall	..	6	1	..
Salt Lake	3	15	2	..
Los Angeles	..	...	..	..
Whittier-Coyote	3	17	..	..
Puente	..	1	..	..
Fullerton-Brea Canon	5	45	1	..
Repetto	..	1	..	..
	93	647	65	9

TEXT OF PIERCE DECISION REFUSING PATENTS TO TRANSFERRED LANDS—YARD DECISION HOLDS.

The full text of the opinion of Assistant Secretary of the Interior, Franklin S. Pierce, in the case of the Bakersfield Fuel & Oil Company, in which patent to 160 acres of land in the Kern River district was refused because title had been transferred to a corporation, has been received at Bakersfield, says the *Mining Review*. The assistant secretary applied the Yard decision, which originated with him, as was expected. This decision makes a corporation an entity, entitled only to what an individual would be entitled to, which in the case of a placer location is twenty acres. In his syllabus the Assistant Secretary says, in part:

"Discovery of mineral is the one absolutely necessary prerequisite to the initiation of title to mineral lands on the public domain. Until discovery is made the so-called locators hold their possession by sufferance and not by right; until discovery is made they acquire no interest in the public domain and have nothing to convey. But it is pressed upon our attention that locations are frequently made without discovery of mineral and that upon discovery the claims relate back to date of location. It is true that the Department often recognizes the validity of such locations by relation, but the doctrine of relation has never been invoked to the disadvantage of intervening adverse claimants, nor to permit any one to secure more land in an indirect method than he could directly.

"Appellant relies upon the case of Miller v. Chrisman (140 Cal., 140), in which the Supreme Court of California clearly decided adverse to the doctrine of the Yard case. While the Department has great respect for the decisions of the state courts, it does not feel bound to follow them at all times. The case of Miller v. Chrisman was carried to the Supreme Court of the United States and there affirmed (197 U. S., 313). A careful and critical examination of the opinion of the Supreme Court of the United States convinces the Department that that court did not intend to and did not adopt the doctrine laid down by the Supreme Court of California. There is no suggestion in the opinion that would warrant any such conclusion. If turned upon another point, that the intervener had not made such a discovery as would entitle him to protection. We do not regard it as an authority in the case at bar.

"It is pressed upon our attention that the method pursued by the appellant in its attempt to acquire patent to public oil land has been the common method in use in California for many years and that many patents have been issued under similar circumstances. This is the first time the question has been presented to the Department for decision. Whenever a new question is presented it must be decided upon the law, and if the interpretation of the law works disadvantageously or inequitably relief should be secured through Congress; and in view of the situation existing the Department has already called the attention of Congress to the facts and recommended remedial legislation in favor of those bona fide locators who have diligently prosecuted their work to fruition. The decision is affirmed."

SEA SHIPMENT IN DECEMBER BY UNION OIL CO.

During December the Union Oil Co. shipped to domestic ports from San Pedro 86,000 bbls., from Ventura its shipments were 8,700 bbls., from Port San Luis 440,000 bbls., and as marketer for the Producers' Transportation Co. shipments from Port San Luis amounting to 248,000 bbls., making a grand total of 782,700 bbls.

OIL BURNING TORPEDO BOAT DESTROYERS MAKE UNPRECEDENTED SPEED RECORDS.

Our Washington correspondent writes that unprecedented records have been made by the two oil burning torpedo boat destroyers, the McCall and the Burrows, which recently made their trial trips for the New York Shipbuilding Co.

The Burrows, which left the yard of the company on January 7 and returned January 11, exceeded her contract speed of 29½ knots by more than two knots, making 31.575 knots.

In all of her preliminary tests the Burrows, burning oil, maintained a sustained speed which has greatly exceeded all expectations. During her trials there were absolutely no vibrations in the boilers or oil pumps, which hitherto has not been the case in oil burning at high power. Up to that time the destroyer McCall was the only vessel that during her full power runs did not have vibration in her boilers.

STANDARD SUFFERS LOSS BY FIRE.

between a half and two-thirds of a million dollars on the 7th inst. when several hundred thousand gallons of sulphuric acid, at the acid plant at Point Richmond, Cal., covering ten acres, was destroyed by fire. It is thought that the fire originated from sparks falling from the 100-foot chimney to the roof of the acid building, burning their way through and dropping into a vat of acid below, which caused an immediate explosion followed by the rapid spreading of the flames. The fire was a very spectacular one, the flames being visible in San Francisco across San Francisco Bay. Although every effort was made to conquer the flames nothing availed much, the new three-story structure which was only recently completed and which formed the most valuable part of the acid plant being completely gutted by the fire with only the walls left standing, while the older buildings were absolutely wiped out. An excellent photograph of the company's refinery at Pt. Richmond, showing the tall chimney from which the spark that ignited the acid is supposed to have fallen, and in fact the entire plant, appeared on the cover of the January number of the *California Derrick*.

STANDARD OIL EXTENDS PIPE LINE.

The *Oil City Derrick* has announced an extension of the Standard's pipe line from Mendota to San Pablo, as follows:

"The Standard Oil Company is filling in the loops of its pipe lines from Mendota to San Pablo, which will increase its carrying capacity very materially from its storage farm at Waits. The distance is 165 miles from Mendota to San Pablo. From Waits to Mendota is 115 miles. Lines were formerly laid from Waits to Mendota, and the work now in progress will double the line capacity to the sea."

The Gas Lift and its Uses.

By A. S. Cooper, E. M., Ex-State Mineralogist of California.

In California there are many wells which yield natural gas; ordinarily it is present in solution in the water or oil which enters the well upon drilling of same. The absorbing power of water or oil is facilitated by low temperature and high pressure, and is counteracted by high temperature and removal of pressure.

The pressure of gas in solution with water or oil is clearly shown by the fact that in many cases when wells which are flowing water and oil cease to flow, the gas flow also ceases. It follows that if the flow be resumed the gas will again be liberated. A very reasonable explanation for this is, to my mind, that when the water or oil enters the bottom of the well the gas is in solution under pressure which prevents its liberation, but as the water or oil ascends the well, the pressure is decreased and the gas is liberated. Some wells of this character, that is, wells in which there is but little free gas (the gas being only in solution with water or oil), are flowing wells; but most of them are not. It is very often the case that when these water wells are not flowing wells they are abandoned; and even when they contain water with gas in solution they are not exploited in a majority of cases, which is, as can be seen, a very great waste of a valuable natural product.

I am about to describe an invention, the object of which is to obviate the waste just mentioned. To be more specific, the object of the invention is to obtain gas from wells such as those described above. If the flow from such wells at the present time is insufficient to be profitable, or if it is desired to increase the gas from those that do flow, the gas lift which I will now describe will be found to be a profitable investment.

The method of effecting an increase in the gas flow of wells such as are under discussion is, briefly, to lift the water or oil which contains the gas, thus reducing the pressure and allowing the gas to be liberated and collected. This lifting applies not only to non-flowing wells but to flowing wells and, in fact, to every well which is not flowing a "dry" gas.

The invention contemplates the lifting of the water or oil by means of compressed hydrocarbon gas introduced below into the water or oil column (U. S. Patent No. 753,045).

The best way to describe the invention, or any invention, in fact, I find to be by means of the diagram. The following is a key to the accompanying cut:

A is a compressor, B a receiver, C a separator of oil or water and sand from gas, D a gasoline receiver, and E is the well.

Compressed gas is carried from the compressor, A, through the pipe, I, to the receiver, B. From the receiver the compressed gas is forced down through the pipe, FF, into the well below and is discharged under the water column or oil column (whichever it happens to be), in the flow pipe, GG, when it lifts column in a series of layers and intervening bubbles. The column being thus lifted, the pressure is reduced and the gas liberated. The mixture of water or oil sand and gas enters the separator C at a tangent with its circumference, producing a rotary motion which by its centrifugal force separates the oil, water and sand from the gas. The gas flows as liberated through the pipe, H, to the compressor, while the oil and water flow out through the pipe, O, and are removed through the cock, J.

Surplus gas—that is, gas not used to raise the water or oil—is forced through the cock, K, to places of use.

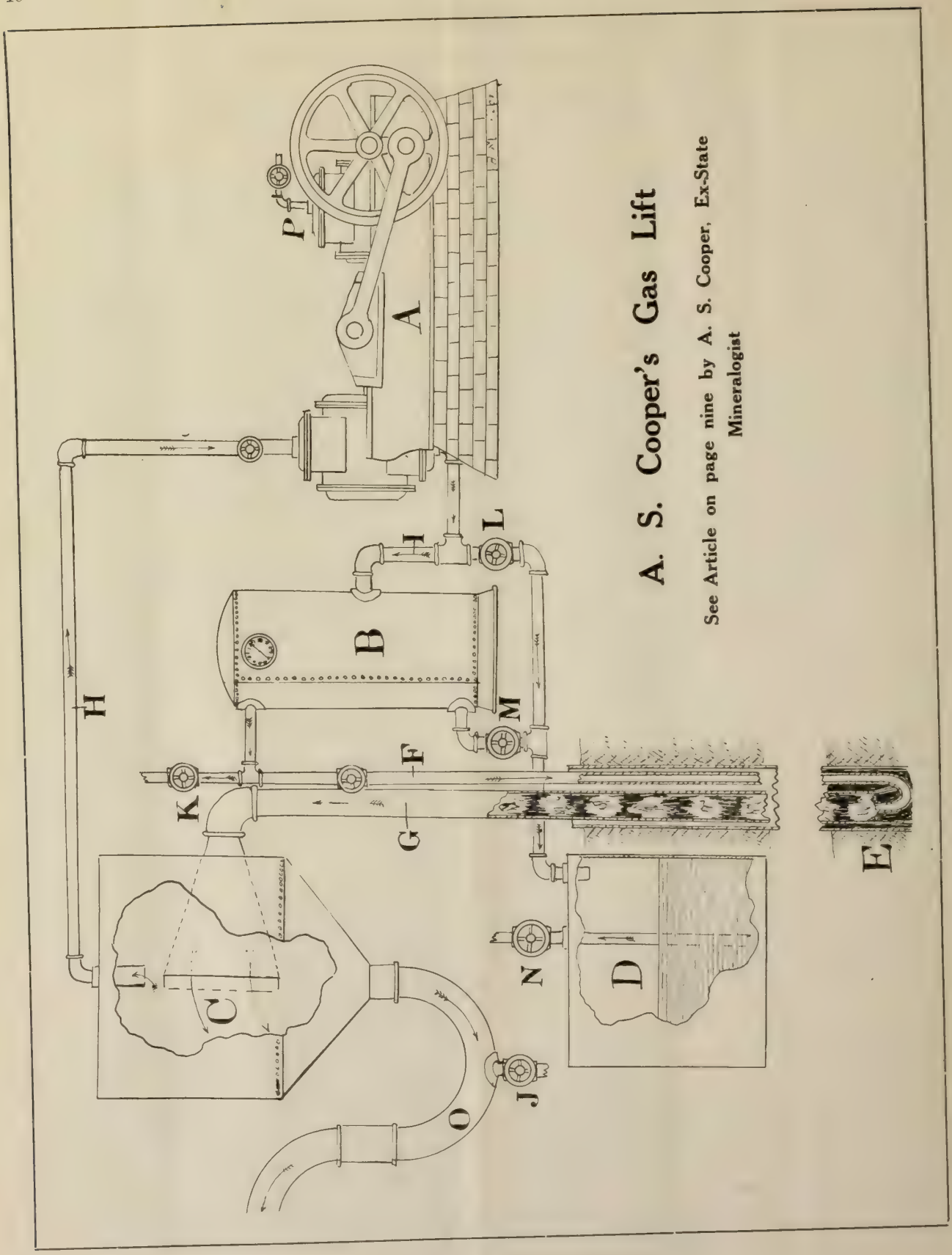
In this operation an air lift pump is wholly inapplicable for two reasons, to-wit: first, the addition of air to the water or oil containing gas in solution in wells of the character mentioned will make an explosive compound or mixture, and secondly, it will under any circumstance deteriorate or impoverish the gas and in both instances will render it unsuitable for illuminating or other purposes to which natural gas is put. Air cannot suitably be used for lifting such water or oil; the proper lift is a hydrocarbon gas, either made especially for the purpose, or, as is shown in the drawing, taken from the natural gas of the well itself. The result of lifting the oil or water by the described method to liberate the gas, will be accomplished, and at the same time the gas so obtained will not be explosive, impoverished, or deteriorated in any manner, and it will be suitable for any purpose to which it is usually put. Useless wells, therefore, which have been abandoned or have been unprofitable, can now be made to yield very profitably. The advantage of the invention is evident.

Not infrequently gasoline separates from the natural gas by compression. When this occurs the product is allowed to flow through the cocks, LM, to C. When the cock, N, is opened the pressure of the compressed gas on the surface of the gasoline forces the latter to the place of storage.

Another feature of the gas lift is that all the machinery is concentrated at one place, and any number of wells distributed over a wide territory may be operated by one plant and one force of men.

The same compressor may operate a number of wells and pump gas to the various places of distribution and also separate the gasoline from the gas. The gas lift throws sand without injury to the machinery and by so doing clears the formation at the bottom of the well so that the water or oil enters the well with more freedom. No water or oil is too muddy, to sandy or viscous for the gas lift. Also, the presence of a large amount of gas within the well does not interfere with the gas lift, as it does with all other pumps except the air lift. In starting a reciprocating centrifugal or rotary pump it is necessary to remove the air or gas from the pump or casing and the other spaces communicating with them. The operation of expelling the air or gas from the pump is called priming and when a large amount of natural gas enters a pump it loses its priming and ceases to raise water or oil.

The conspicuous feature of a gas lift is that it will take all the water or oil a well can supply, whereas the ordinary mechanical pump merely bails out a certain number of gallons per minute, usually less than the well can give. The largest amount of water or oil with natural gas and the vapors of gasoline, can be pumped from a given well, thus utilizing the well to its maximum capacity. By means of the gas lift flowing wells can be made to yield from two to ten times their normal output of water or oil and gas. Wells which do not flow can be made to flow to their maximum capacity. Further, the gas lift can be used fo increase the lift and capacity of other pumps by introducing a gas jet into the pump column. Compressed gas can be introduced into the column pipe of a pump in order to increase the lift beyond that otherwise admissible on the pump.


A. S. Cooper's Gas Lift
See Article on page nine by A. S. Cooper, Ex-State Mineralogist
A
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When the quantity and pressure of gas in a well is insufficient to raise or clear the liquids from the gas-producing well, the natural flow of the gas can be assisted by introducing compressed gas into the flow pipe some distance beneath the surface. In all the cases cited the natural gas can be saved and the gasoline taken from it. When the wells have a subterranean connection those wells which are pumped with a gas lift have a great advantage over wells not pumped in this manner. Where the subterranean connection is good the well fitted with the gas lift may divert the flow of an artesian well that is not pumped by a gas lift and thus take its natural gas flow from it. While an air lift might perform the same duties as a gas lift, to a certain extent, neither the gas nor the gasoline taken from water or oil in a well can be saved for use.

Hence it will be seen that with a gas lift millions of feet of natural gas will be obtained that cannot economically be gotten at without one, and further than this, millions of gallons of gasoline, which at the present time is a very precious commodity on this Coast, and which is now lost in the air, can be saved. Not only will this saving avert a shameful waste, but it will undoubtedly, if taken advantage of, prove a most profitable investment.

1910 SPLENDID YEAR FOR UNION OIL COMPANY.

In the year just past the Union Oil Company earned, net, $3,262,563, making a net earning at the rate of almost 12%, or, to be exact, 11 9-10%. Total dividends paid by the company during the year amounted to $1,703,616, leaving a surplus of $1,558,945. Rate of dividend, slightly above 6 1-5%. Total gross earnings during year amounted to $12,828,679. Cost of oil and manufacturing supplies amounted to $3,851,831. Depreciation totaled only $619,253 and maintenance amounted to $5,095,031, making a grand total expenditure for the year of $9,566,116.

On December 31, 1910, the Union had 352 producing wells, and their vast holdings are conceded to be excellent. Their total sales of crude and fuel oils in 1910 were 8,391,530 barrels, valued at $7,002,444, while the total sales of asphaltum and refined products during the year amounted to $3,763,134.

At the present time the Union is considered to be in a stronger position than ever before. It has a market for every drop of refined oil which it can produce, and in fact lacks the production at the present time to fill its market. Its crude oil is entirely disposed of for a period of three years at a good price. Its refinery is busy, likewise its fleet, and the company presents every evidence of an unbounded prosperity. Oil is comparatively cheap at the present time and the stockholders can look forward to a continuance of good business conditions and therefore to steady dividends.

SOUTHERN PACIFIC LANDS FILED ON—GYPSUM LOCATIONS MADE ON RAILROAD HOLDINGS.

Mining locations bearing date of January 10 were recorded recently by J. M. Danziger, C. A. Canfield, et al., conveying 11,200 acres of Southern Pacific patented land in townships 32-24, 31-23 and 11-23, Midway.

The land located in township 32-24 is adjacent to the property of the Honolulu Consolidated Oil Company in the gas belt of the Buena Vista Hills. Township 31-23 includes rich gusher land in the Midway valley, and township 11-23 is south and east of Sunset.

None of this land is included in the sections the title to which is attacked by the suit filed against the Southern Pacific by the United States Government. Moreover, the land on which the locations were filed was patented to the railroad in the seventies and nineties, while the land involved in the suit was patented about seven years ago. If there is any virtue in the statutes of limitations in a case of this sort, it would apply to the former, but not to the latter.—Midway Driller.

MEETING OF THE DIRECTORS OF CALIFORNIA CONSOLIDATED OIL COMPANY.

A number of meetings of the directors of the California Consolidated Oil Company were held at the offices of the company in San Francisco during the latter part of January and the first several days of this month, at which some very important moves were decided upon. While nothing definite has leaked out concerning the exact happenings behind the closed doors where were held the meetings, it is rumored that the interests of certain Eastern men who had purchased heavily when the company was formed, were taken over by Admiral Evans, and that one of the directors withdrew from the company immediately thereafter, to the betterment of the company. Several New York men are known to have become heavily interested in the California Consolidated at practically the same time the directors' meetings were in progress, and it has been authoritatively stated that the company will make the next payment on the Mascot and Premier properties in advance of the date set for same, the 21st inst.

Immediately subsequent to the termination of the directors' meeting Admiral Evans left San Francisco for a trip through the oil fields, meeting Colonel Timothy Spellacy, who accompanied him, at Bakersfield. It was given out by a Bakersfield oil paper that new properties might be acquired at this time, but this report could not be substantiated at the office of the company. Admiral Evans is very optimistic about present conditions and expresses his confidence in a remarkably prosperous future.

ENGLISH TO OPERATE IN LOST HILLS COUNTRY.

According to the Midway Driller, which is reliable, an English syndicate with holdings comprising ten sections in township 27, range 21, Lost Hills, is to begin drilling shortly, having already erected two rigs. At the present time there are rigs in four different townships in Lost Hills, the farthest north being those of the American Oilfields Company. Further information in regard to Lost Hills is that there is no longer a danger of scarsity of water there as the district is underlain with a good stratum of water sand, an artesian well having been reported struck just recently by the Martin and Dudley people. The town of Lost Hills is reported to be increasing in size gradually, and by no means with the rapidity indicated in the "rush" stories which have been going the rounds of the State's "oil" press.

FAILURE TO EXERCISE OPTION CAUSES LOSS OF $55,000

A report from a very creditable source is to the effect that failure on the part of the Associated Oil Company to purchase 1500,000 barrels of oil from the Kern River Oilfields of California, Ltd., has caused a loss of $55,000 to the persons responsible for the sale of the companies which go to make up the latter corporation. It appears that the contract entered into with these companies for the purchase of oil at 40 cents per barrel carried with it an option for 1,200,000 barrels more than the quantity named; and that when the deal for the properties was made, in London, the vendors assumed that this option would be exercised. The sale was made in April, 1910. Subsequent to that time the Associated made a deal with the Independent Agency which relieved it of the necessity of exercising the option and instead of so doing it bid 35 cents per barrel for the oil. The offer was accepted after the vendors had agreed to make good the difference.

Permanency of Natural Gas in California

By A. S. Cooper, E. M., Ex-State Mineralogist of California

In order to best convey to the mind the permanency of natural gas in this State, I have made two diagrams which are shown herewith. Diagram No. 1 displays part of the La Brea Creek, Sisquoc Rancho, Santa Barbara County, California, and the region thereabouts. The entire formation here is composed of alternating beds of sandstones and shales. Diagram No. 2 cuts a mountain formation.

As usual, I have lettered my diagram, as it saves time and is the most convenient method of displaying the points to be brought out in an article of this nature.

Diagram No. 1.—At the point G there are several small deposits of heavy petroleum brought to the surface by mineral springs. At B is an old gas "blow" about forty feet in diameter. On account of the large amount of mineral matter deposited here from the gas no vegetation grows on its surface. A short distance below the surface the ground is impregnated with sulphur which has filled the cracks and seams in the earth, stifling the further flow of gas. The sulphur was evidently deposited from the decomposition of the small amount of sulphurated hydrogen in the gas when it came in contact with the air, and must have taken many years to accumulate.

Between the points D and E natural gas rises in many places through fissures and cracks in the bed of the creek, bubbling up through the water. When lighted it burns with a luminous flame.

At the point A a well was drilled to a depth of 1000 feet. From a depth of 700 feet down to 1000 feet, when the water in the well was agitated by drilling or bailing, hemispheres of large bubbles, blown by the natural gas and coming from the well, continually formed on the floor of the derrick. The size of these bubbles may seem incredible to those unacquainted with the facts, but nevertheless they actually measured, on an average, six feet in diameter and three feet in height. These bubbles were being formed beneath the surface within the pipe continually, and bursting after they reached the surface.

When the column of water in the well became light enough, through the intermingling of natural gas, for the pressure of the underlying gas to assert itself, the water was thrown from the well to a height of about ninety feet. These eruptions occurred a number of times daily and for a number of months, or the entire time during which the well was being drilled. When the well was not agitated by drilling and bailing for several hours but a small amount of gas was to be seen.

To the south of the fissures and crevices just mentioned, through which oil gases and mineral were and are ascending, the pores in the sandstones and the cracks in the shales are filled with asphaltum, while north of the fissures and crevices the sandstones and shales are devoid of bitumen. This deposition of bitumens on one side of the crevices shows that in ages past, before water had cut the bed of the creek to its present level, there were water currents which flowed from the high mountains on the north to the valleys on the south and these currents had carried the oil into the pores and seams of the rocks south of the fissures and crevices. The quantity of bitumen in these rocks amounts to hundreds of tons.

Hot alkaline solutions rising from these fissures have changed the insoluble silica of the shales to a soluble silica, south of the anticline. The presence of soluble silica shales is rendered conspicuous by their whiteness. That mineral waters, gases and oil have ascended through the cracks and fissures for over a thousand years is shown by the large amount of hard bitumen impregnating the rocks. At the time the bitumen entered the pores and minute seams in the rocks it must have been in a very liquid state and since then over a thousand years, at the very least, must have elapsed in order to evaporate it to asphaltum.

Rocks lying over 600 feet above the bed of the creek are charged with bitumen and their impregnation must have occurred when the creek bed was above their level. I cite this merely to show that for the water to have cut the creek from that level to its present depth must have required more than a thousand years.

From this we conclude:

That the volume of natural gas given off since these springs have been known and the immense volume which must have been given off since they were formed, is far too great for it to have come from a body of "free" gas stored in porous or seamed reservoirs.

That owing to the broken, fissured and cracked rocks forming this anticline a cover or encasement sufficiently tight to hold gas could not be expected to exist.

That this gas could not have come from a volume of stored waters holding it in solution.

Consequently, that this gas is being generated at the present time.

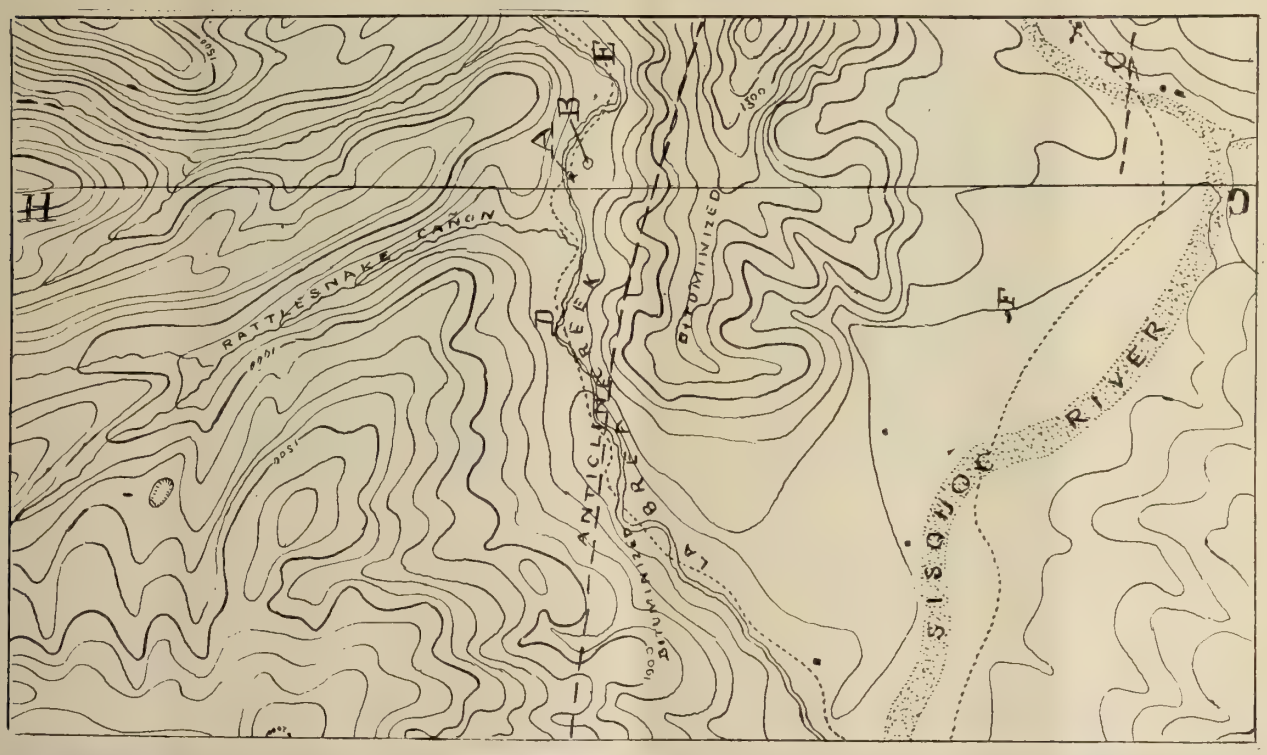
Then: If this gas has been generated for at least one thousand years, and, if, as has been shown, it is still being generated, the permanency of natural gas in California follows as an inexorably logical fact.

TEMPLOR-McKITTRICK OIL COMPANY OPERATIONS.

Well No. 2 on the Sunset holdings of the Templor-McKittrick Oil Company has been flowing steadily since about the middle of November. It is estimated that the well is producing at the least about 40 barrels of oil daily and the company has fully 2500 barrels in storage on the property. A contract has just been entered into with the Sunset Western Railway for the building of a spur track to the company's property. It is anticipated that the spur will be completed within the next two weeks, and, as the oil is very desirable as a road oil, the company will be able to dispose of its product at a very favorable price. It is understood that bids for from 70c to 75c per barrel have already been received.

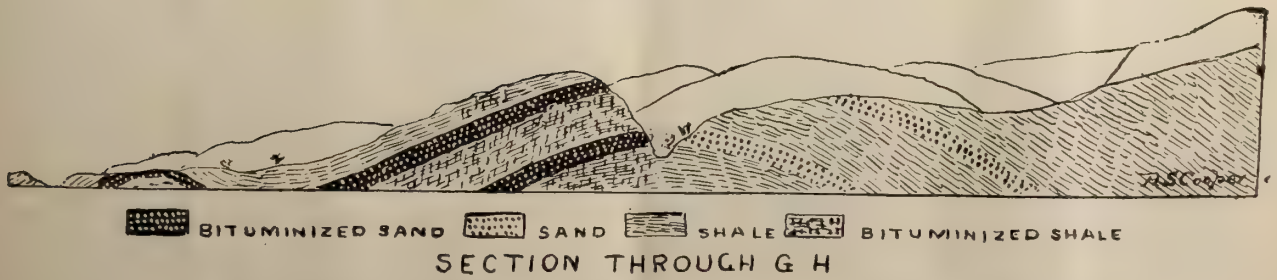
The work necessary to place well No. 1 in condition was begun two weeks ago and indications are that the well will soon to be on production again. The management purposes to develop the entire property as rapidly as possible, and it is believed that a very good production can be obtained from the comparatively shallow wells at the western end of the lease. Well No. 2 is about 1100 feet deep. It is expected that well No. 1 can be placed on the pump from about 840 feet depth.

Diagram No. 1. Illustrating Ex-State Mineralogist A. S. Cooper's article on opposite page, "Permanency of Natural Gas in California."



The Diagram shows the Sisquoc River, Rattlesnake Canyon, La Brea Creek and region thereabouts under discussion.

Diagram No. 2



A Cross Section Through the Country Described in Mr. Cooper's Article.

RECENT PATENTS.

The following recent patents of interest to the oil trade are reported expressly for The California Derrick by J. M. Nesbit, Patent Attorney, Park Building, Pittsburg, Pa., from whom printed copies may be procured for 15 cents each:

Well screen, H. R. Decker, Houston, Texas, 979,748.

Well drilling machine attachment, George Hombarg, Hampton, Ky., 979,954.

Oil well pick up, H. A. Sills, Robinson, Ill., 980,018.

Underreamer, B. L. Peterson, Robinson, Ill., 980,331.

Combined pump jack and engine base, F. D. Winkley, Madison, Wis., 980,727.

Drill rod grab or slip socket, J. F. Burnes, Franklin, Pa., 980,920.

Sand traps for pumps, Rudolph Conrader, Erie, Pa., 981,172.

Oil distilling and refining apparatus, J. S. Cosden, Bigheart, Okla., 981,176.

Underreamer, E. C. Wilson, Bakersfield, Cal., 981,510.

Ejector for wells, J. B. Tait and Thomas Maloney, Maricopa, Cal., 981,716.

Apparatus for distilling oils of the petroleum, tar, and like industries using a high vacuum, Leo Steinschneider, Brunn, Austria-Hungary, 981,953.

Cage or support for well tubing, H. C. Harpham, San Antonio, Texas, 982,067.

Underreamer, A. G. Heggem, Corapolis, Pa., assignor to Oil Well Supply Co., Pittsburg, Pa., 982,069.

Casing shoe, A. G. Heggem, Corapolis, Pa., assignor to Oil Well Supply Co., Pittsburg, Pa., 982,491.

Underreamer, P. H. Mack, Bradford, Pa., assignor to Oil Well Supply Company, Pittsburg, Pa., 982,513 and 982,514.

Pump rod guide bearing, J. H. Range, Skidmore, Tex., 982,870.

Swivel rope socket for wire line pumping outfits, L. C. Sands, Pittsburg, Pa., 982,998.

Hydraulic rotary drilling machine, A. G. Heggem, Corapolis, Pa., assignor to Oil Well Supply Co., Pittsburg, Pa., 983,050.

Well drilling machine, T. H. Kerr, Pittsburg, Pa., 983,064.

MADISON OIL COMPANY.

Another shipment was recently made from the Kern River lease of the Madison Oil Company and the well on that property is proving a very good producer. This property is considered to be highly productive territory for the Kern River field, which is noted for its steadiness rather than its large producers. The lease is from the Yellowstone Oil Company and the five wells on the adjoining ground are excellent producers while the well recently completed by the Merchants' and Bankers' Oil Company on the north line of the property of the Madison Oil Company is also a good producer, and proves that the productive sands extend under the Madison Company's acreage. It is said that the Madison Company's stockholders are highly pleased with the company's prospects.

LADY WASHINGTON OIL COMPANY.

Well No. 1 on the property of the Lady Washington Oil Company on section 6, in Sunset has reached a depth of about 2800 feet and is now in a stratum of hard shale, where the drillers expect to land the string of 5⅝-inch casing and shut off the water. It is reported that for the last 200 feet the well has been passing through oil sand strata with considerable showings of oil and a strong gas pressure. The superintendent believes that the "big sand" lies immediately under this stratum of hard shale, which the well is just penetrating, and which is being entered very cautiously. There is no doubt about the presence of oil on this lease, and it is generally conceded that it will be obtained in good quantities.

JEWELL OIL COMPANY.

The Jewell Oil Company made shipments during the month just past to the amount of from 4000 to 5000 barrels of oil. At the present time there is considerable oil in storage on the lease, and the wells are in good producing condition. It is expected that the company's shipments will be considerably increased during February, and from a recent report we gather that the property is in fine condition.

VENTURA OIL DEVELOPMENT COMPANY.

Manager Warren C. Daniels of the Ventura Oil Development Company, operating in the Ventura fields, has given a report on the company to the following effect:

Well No. 3 on the Ventura property is about 1600 feet deep at present, and there have been good showings of oil from about 1365 feet all the way down to the present depth and the indications in the last 100 feet have been so good that the company has decided to test the well, believing that a good production can be obtained without going down farther.

On the Newhall property, formerly known as the Clampitt lease, the rainy weather has somewhat delayed shipments, but there is a good amount of oil in storage and the property is in fine condition, and the management looks for better returns than ever before from now on.

GASOLINE FROM GAS—PLANT TO BE ERECTED SOON—MEN WITH GREAT GAS WELLS FINALLY REALIZE THEIR VALUE.

The manufacture of gasoline from natural gas on a large scale in Western Kern County is at last an assured fact. Back in Pennsylvania they have been obtaining gasoline from gas for some time, but until the present time California men with natural gas wells have not been progressive in the matter of obtaining gasoline from their valuable product, which has been going to waste by the millions of feet. This is now to be changed however. It is announced that the Honolulu Consolidated Oil Company, of which Capt. William Matson, the San Francisco navigator and capitalist who has had such success in the oil business, is president, is to "refine" the gas from its phenomenal gas wells, and that from every thousand feet so treated, two gallons of gasoline will be secured. Here is a business which the Standard has absolutely no "cinch" on. In fact, the Honolulu Consolidated is the only company the managers and owners of which have so far had brains and energy enough to utilize their gas for this purpose. There is every reason therefore, why the company should coin money from its gassers. They are the first in their field.

It is said that a great plant for the manufacture of gasoline will be built by Captain Matson, or his company, in order to care for the treatment of the monstrous product of their three wells. The total yield of these wells per day is almost unbelievable; it amounts to 105,000,000 cubic feet. If all this product is used the chemists say that 210,000 gallons of gasoline can be manufactured daily. Such being the case there need be no fear of any shortage of gasoline on this coast after the plant is once in operation. Standard Oil will not have to send East for gasoline when they can buy it at home; that is, if the Honolulu Consolidated will sell—but at present their market is too enticing, it would seem, to nip a great future business in the bud.

A GUSHER IN FULLERTON.

Our Los Angeles correspondent states that when drilling out well No. 7, the Fullerton Oil Company recently struck a flow of oil and gas from the well that caused much surprise. Fifteen thousand barrels of oil was produced in a hurry, before the well sanded up. When cleaned out again it is expected that the well will be an excellent producer. Well was finished at a depth of 3200-and-a-fraction feet.

TWO OF THE PRINCIPAL MEN INTERESTED IN THE NEWLY INCORPORATED MEXICAN PREMIER OIL COMPANY.

COL. TIMOTHY SPELLACY

Well-known California Oil Operator, and recent Candidate for Lieutenant Governor of California

REAR-ADMIRAL R. D. EVANS (Retired)

President California Consolidated Oil Company.

Mexico, the Mecca of American Capitalists

Colonel Timothy Spellacy and Mr. J. D. Thomson, two of California's most successful and best known oil operators, have formed a great oil company to develop oil on approximately thirty thousand acres of petroleum bearing property in Mexico, near Tampico. With them in the new corporation are associated Admiral R. D. Evans, William Wallace, Peter Spellacy, R. P. Boyer and N. F. Wilson, the latter having financed the corporation.

The name of the new Spellacy-Thomson-Evans-Wilson corporation is the "Mexican Premier Oil Company" and its immense holdings are in close proximity to the Waters-Pierce (Standard) Oil Company, the Mexican Petroleum and Huasteca Petroleum (Doheney) Companies, and the Aguila (Eagle) Petroleum Company properties. The Aguila company is better known as "S. Pearson & Sons" and recently obtained a gusher which is actually outrivaling the Lakeview gusher, or the famous Dos Bocas gusher of the same district, with an average daily output varying from 100,000 to 170,000 barrels of oil. Other big wells surround the properties of the newly incorporated Mexican Premier Oil Company, among them being the Doheney Company's 25,000-barrel per day gusher, which has now been spouting for more than a month past. There is no question as to the value of the properties owned by Messrs. Spellacy and Thomson, or rather, by the "Mexican Premier Oil Company"; their worth is absolutely proven.

For some time it has been known that Colonel Spellacy and his associates, Mr. Thomson and Mr. Wallace, as well as Mr. P. Spellacy, have been giving a great deal of attention to their Mexican property, so that the announcement does not come as a complete surprise to those who are well acquainted with them. The announcement that Admiral Evans and Mr. N. F. Wilson were interested, however, comes distinctly as a pleasant surprise, inasmuch as the matter was kept so entirely in the dark that nothing was suspected of their connection with the new project. As far as we can ascertain, the details of the incorporation of the new company are as follows:

The articles of incorporation of the Mexican Premier Oil Company were filed in Phoenix, Arizona, on February 2. The capital stock of the company is given as two million shares, each of a par value of one dollar. The entire Spellacy-Thomson interests, consisting of approximately 30,000 acres of oil lands, are taken over by the company. The land lies adjacent to other productive lands on which the greatest gusher in the world is at the present time producing an average output in excess of 100,000 barrels of oil per day. The properties of three great corporations surround the Mexican Premier Oil Company's property. These corporations, given above, are: Waters-Pierce (Standard) Oil Company, Mexican Petroleum (Doheney) Oil Company, and the Aguila (Eagle) Petroleum Company (S. Pierson & Sons'), the British corporation which has been fighting Waters-Pierce. Sites for two wells have already been selected and two extra heavy complete drilling outfits have been purchased, together with a boat. Mr. J. D. Thomson, it has been announced, will leave for Mexico immediately and will supervise the drilling of the first two wells.

Admiral Evans' interest in the new corporation is stated to be heavy. As is well known Admiral Evans is president of the California Consolidated Oil Company, which was formed of the Mascot, Premier and Yellowstone Oil Companies, and which is at the present time in a very flourishing condition.

Our readers are so well acquainted with the many successful deals in which Colonel Spellacy and Mr. Thomson have been active that it scarcely seems necessary to mention their California interests other than to recall the fact that they were chiefly interested in the Mascot, Premier, Illinois Crude and other unusually successful companies, while Colonel Spellacy, besides having an interest in the Midway Premier, which brought in a large gusher in Midway recently, is known all over the oilfields East and West, being an old-time Pennsylvania operator. Colonel Spellacy's judgment in the selection of oil properties has in truth been phenomenal. Every property which he has taken up has been a success. His career bids fair to parallel Mr. Doheney's, who formed the American Petroleum Company and the American Oilfields Company, two of the greatest and richest independent oil companies in California, and who went into Mexico, some ten years ago, and formed successively—and successfully beyond all expectation—the Mexican Petroleum Company of California, the Mexican Petroleum Company of Delaware, and the Huasteca Petroleum Company, the combined holdings of which are now estimated to be worth approximately $30,000,000, with a daily increase of value, the greatest oil holdings in Mexico at the present time.

The new Mexican Premier Oil Company was financed through Mr. Nicholas Field Wilson, president of the Lincoln Mortgage and Loan Company, of San Francisco, and no oil stock is being offered for public subscription, which constitutes the difference between the financing of the Doheney companies and Colonel Spellacy's company. We are glad to give publicity to Mr. Spellacy's great project, as it certainly constitutes the largest corporation launched by California oil men in Mexico, in recent times; and because the value and the future of the new company are absolutely assured.

In the opinion of a number of the highest authorities, Tampico is destined to become the greatest oil port in the world in the very early future.

We devoted considerable space to this matter in our January issue, but since then United States Consul Miller, at Tampico, has issued a very thorough statement giving a most excellent idea of the petroleum fields and conditions there, which we are pleased to print in full herewith:

REPORT ON THE OIL SITUATION IN MEXICO TO UNITED STATES BUREAU OF MANUFACTURES.

By U. S. Consul Miller, at Tampico.

(Note.—This report was made before the incorporation of the Mexican Premier Oil Company.)

Properties of the Doheney Companies.

"The American Doheney syndicate controls companies and subsidiary companies engaged in the development of the oil fields in the Tampico section and in the marketing of the products made from the crude oil, whose holdings represent an investment of almost $30,000,000 gold. These properties include the oil-producing properties of the Mexican Petroleum Company of California at Ebano, San Luis Potosi, the Huasteca Petroleum Company, the Tamiahua Petroleum Company, and the Tuxpam Petroleum Company, all of which are operating just south of Tampico, in the State of Veracruz. Other properties include the gas plant of the Mexican National Gas Company at Mexico City, the paving plants of the Mexican Asphalt and Construction Company in Mexico City, Guadalajara, Puebla, Chihuahua, and Tampico, and those to be established in the near future in Monterey, Durango, and Morelia.

"Until recently the only producing oil wells in the Gulf coast section were those of the Mexican Petroleum Company at Ebano, San Luis Potosi. These will have furnished a steady production. But the production was not sufficient to permit the company to fill all the contracts that were available. Since last August, however, the success of the Huasteca Petroleum Company, one of the allied or auxiliary companies in the fields at Juan Casianos, Veracruz, has made the oil properties of that company even more valuable than those of the Mexican Petroleum Company at Ebano. Well No. 7, the greatest oil well of the district, is claimed by the company to have a daily production of 28,000 barrels. It is said to be under a pressure of 3000 pounds, and at present to be shut in 50 per cent. Well No. 6, which is claimed by the company to be a 15,000-barrel well, is shut in entirely under a 570-pound pressure.

Storage and Transportation.

"The oil goes through the pipe line from the field at Juan Casiano to Tampico. The largest pipe line delivery in one day up to the present time is 30,000 barrels, but when the storage facilities at Tampico are completed the company expects to pump 32,000 barrels daily. About 20,000 barrels are shipped daily by rail from Tampico. A part of this goes to Ebano to be stored and the remainder to the gas plant in Mexico City.

"The greatest problem now confronting this company is that of storage capacity. The storage plants include 24 steel storage tanks, each having a capacity of 56,000 barrels. Nine of these have already been completed and it is expected that the remainder will be finished at the rate of five per month. Work has also been commenced on a reinforced concrete reservoir at Tampico that will hold 1,250,000 barrels. It is said that as soon as possible work will be commenced on another reservoir of the same kind, but having a capacity of only 750,000 barrels, at the Geronimo pipe line station. A third reservoir of the same kind, with a capacity of 500,000 barrels, will be built, according to the plans of the company, about one mile from the Casiano field.

Necessity of Supplies.

"All of this construction work necessitates the purchase of large quantities of supplies. One hundred mule teams and scrapers have been brought in from El Paso, Tex., 22 carloads of lumber have been brought here from the Chihuahua lumber mills, and 75 carloads of machinery have been brought in through El Paso. In addition large quantities of lumber, machinery, oil well supplies, etc., are constantly arriving in Tampico by steamer from the United States, while thousands of barrels of cement have been brought in from Germany.

Great Construction Work Projected.

"The company is also preparing to build a 75-mile steam railway from the Ebano fields across its property to the Tuxpam river, at a cost of about $1,000,000 gold. The ties are said to be already on the ground. The company has its own telephone line from Ebano to Juan Casiano and also between Tampico and Casiano. It also has a concession to lay a pipe line under the Panuco river, by which it will be able to deliver oil at the Waters-Pierce tanks at Tampico.

Other Interests.

"Another company that has been successful in finding oil in this district is the Aguila Petroleum Company (Pearson & Son). This company is said to have an abundant supply of oil from its wells at Tanguijo and Portreros del Llano, Veracruz, in this district. (It is announced by the Mexican Herald of January 5 that the Pearsons have brought in a new well at Portreros de Llano, the flow of which is estimated at 100,000 barrels a day. It is flowing in a great stream 100 feet high and steps are being taken to save the flow and prevent such a conflagration as destroyed the great Dos Bocas gusher.) The company now has three large barges which are used to transport the oil to Tampico. In addition the company is having Captain Hermanson, of the Tampico Navigation Company, build for it six large steel barges to be used for the same purpose. These barges will have a carrying capacity of 1000 barrels each.

"This company also has the entire output of the wells of the Oil Fields of Mexico Company at Furbero, Veracruz, about 55 miles from Tuxpam. This latter company is putting forth every effort to bring in new wells and increase its production. Scores of drillers have been brought to the field from the United States and been put to work drilling wells in the proved oil field. The product is pumped through the pipe lines of the company from Furbero to Tuxpam, about 55 miles, from whence it is shipped by steamer to the Pearson refinery at Minatitlan.

"All of the companies which had to shut down on account of the rainy season and high water have resumed operations. Several new companies have also commenced work. Among the new companies is the Gulf Coast Oil Company, under the management of A. H. McKay and J. E. Mulligan. Edward Williams has also commenced drilling near Panuco."

It might be added that there is no better market place for oil in the world at the present time than Mexico as fuel oil is bringing 92½ cents gold per barrel at the well.

WHITTIER-DES MOINES GETS OIL.

The Whittier-Des Moines Oil Company has struck oil, obtained at a depth of 3,260 feet. At last reports the drilling was still going on, although a splendid producer is assured.

A description of the "Breitwiser" new all-iron rotary standard well drilling machine.

Written by J. E. Breitwiser, M. O. E.

(Editor's Note.—At the request of the editor of the "California Derrick" Mr. J. E. Breitwiser, who has constructed a new all-iron well drilling machine which is considered by experts to be a remarkable improvement over anything heretofore constructed for well drilling, has written the following descriptive article. Believing that this machine will prove of great value to every operating company which purchases it, we take pleasure in being the first publication to inform oil operators about it.)

For many years improvements have been rapidly made in every kind of machinery except that used for drilling. The same wooden drive pulleys, wooden rope spools, aptly called bull wheels, rope transmission and grooved wooden boxings are used fully fifty years after such antiquated mechanism has disappeared in all other lines of machinery. The cut and explanation herewith describe a construction entirely new and all iron in its every part. Its method of drilling is the same as the old style standard, with which it combines, and has all the methods of the newer rotary and circulating systems. Each of these methods may be employed, specially one at a time, or combined, without removing any part of the construction, after once correctly installed.

The engine used is of the usual type and placed in the usual position. It may use both a belt pulley and drive sprocket. The crank shaft is set up as heretofore and the band wheel is mounted on it in the same manner, but the band wheel may be either of wood or of iron and be adapted to use belting or sprocket chain from the engine, as desired. Then, on either or both sides of the band wheel are mounted rotatably, with jaw clutches to engage them, or fixedly sprocket drive wheels from which sprocket drive chains lead to the bull wheel and calf wheel shaft placed on babbeted cast iron boxing bolted to posts of the rear elevation of the derrick, or in other words the side of the derrick where the driller stands when at work. The crank shaft runs in iron boxings as also does the walking beam, pitman and crown block pulleys. A sprocket wheel is mounted rotatably or as an idler on the bull wheel shaft between the bull wheel and calf wheel and in the usual act of drilling the sprocket chain from crank shaft passes to this idler, which the driller can throw in gear by use of the jaw clutch member, thus throwing in gear or rotating the shaft upon which the bull wheel and calf wheel are mounted. He can throw the entire machine except the walking beam out of gear at the drive sprocket on the crank shaft, in which case only the band wheel and crank shaft are rotating while using the walking beam in drilling; but this is hardly ever done. On the bull wheel shaft are keyed two sprocket wheels, one on either side of the idler referred to. These sprocket wheels revolve whenever the shaft revolves. They have bolted to their outer sides and nearer their outer circumferences a friction brake lined with wooden blocks, and so far as mechanical construction is concerned they are like the outer brake which has been used for over a half century to hold the bull wheel and calf wheel from turning. They open and close in the same way by fastening one end solidly to a spoke in the sprocket wheel and the loose end to a toggle break lever.

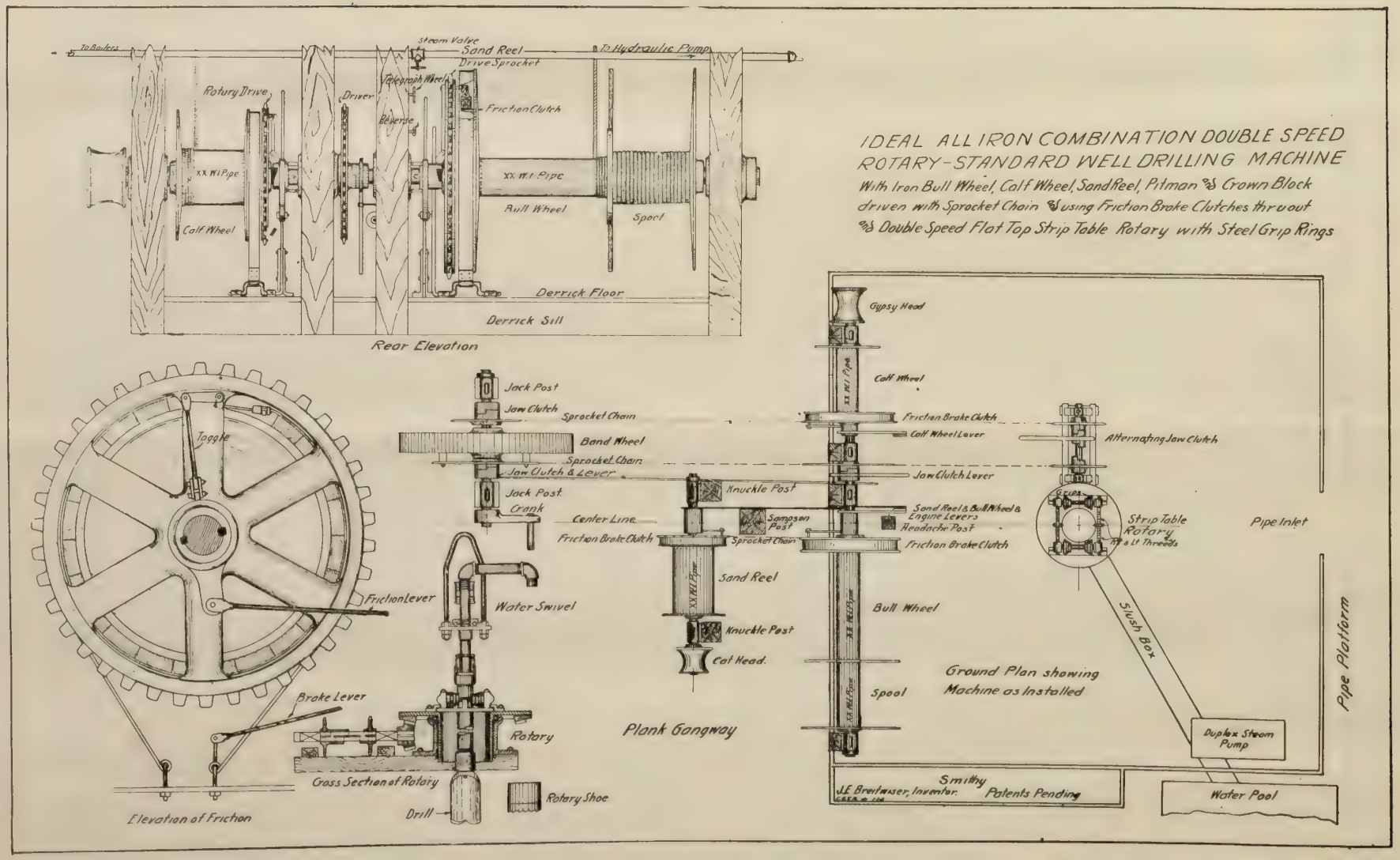
This lever is fastened to the sprocket wheel instead of the floor and therefore the entire friction brake revolves as the sprocket wheels rotate, whereas the outer break which is fastened to the floor remains stationary. It is opened or closed by forcing the crank lever of the toggle outward or inward from the shaft, which operation lengthens or shortens the diameter of the brake and by so doing releases or locks the break on the hub which is on the drum end of the spool proper of the bull wheel, calf wheel or sand reel as the case may be. A toggle rod passes from the crank lever to a slide clutch which moves back and forth on the shaft similarly to a jaw clutch and as it moves it moves the crank lever in or out as described, locking or unlocking the friction brake clutch, which rotates the spools mentioned and thus winds or unwinds the various ropes and cables used in operation. The slide on the shaft is moved back and forth by a rod that passes from the ratchet hand lever at the driller's side to itself, and therefore the driller can operate each of these spools with definiteness and precision without throwing on or off any bull ropes, calf rope or back break as in the old style of rigs used heretofore. A wooden friction clutch will take hold as quickly or slowly as desired and therefore any desired speed of the various cables can be obtained by simply closing the friction a little more or less or by setting the ratchet hand lever a notch tighter or looser. Now allow me to repeat that all may grasp this idea:

Either bull wheel, calf wheel or sand reel can be started, stopped, or slowed down without throwing off any ropes or stopping or using the engine in any way and each of these three can be operated at the same time at any desired speed without the other interfering.

If I could get that idea drummed into the head of every driller and officer, and with it a conception of what a saving of uselessly wasted time it means, there would never be used again a wooden bull wheel, bull rope or lagged band wheel, sand reel mechanism. Or, allow me to say once more so that it is not lost, that here is a construction of sand reel, bull wheel and calf wheel in which each one is always ready for action the instant the driller throws a ratchet lever a few notches, and at any desired speed, and that all three may be in use at the very same time, each one pulling its own cable at its own speed, and that at the same time the walking beam may be in use and a rotary drill turning the casing on the floor of the derrick, and two different cat heads or gypsy heads pulling in casing or other work, and a duplex steam pump forcing its stream of water where desired. In addition to all of these the walking beam, pitman and crown block are iron and every single part of the mechanism runs in babbeted cast iron boxings. It seems to me that I should stop at this point and say not another word until these improvements have been thoroughly understood. No more lagging of band wheels. No more wobbly crank shafts with wooden boxings. No more throwing on or off of bull or calf wheels. No more slipping of belts or ropes. No more tightening of ropes or tying with tarred string. No more tramping of bull wheel or calf wheel. No more running across the floor to catch a brake after a string of tools have gained speed into the hole where they go invariably in such a case. No more stopping of engine; "sawing her back ad forth or kicking her off center" tooly. No more loose gudgeons or worn wooden boxings. No more straining of derrick from over-tight ropes. No more "turning turtle" or crown block. No more stretching of engine or running to engine house just when a quick, strong pull is needed instantly. No more of any of the dozens of delays that occur just when the driller ought to be doing something and doing it quickly to avoid a fishing job. No, none of these—but instead a machine that will either pull down the derrick, tear a cable in two or stop the engine in three seconds; or that will take hold so steadily, at will of driller, that it cannot be noticed, and a machine that is always, ever and eternally ready to do what he wants it to do.

Now to a description of the rotary part of the machine. That the rotary process is ten times faster than the standard in conglomerate is not denied and that it is ten times slower in rock or cement caps should also be admitted by any fair minded driller with rotary prejudices, while the standard "crank" ought to admit the first statement. This being the case it appears that neither machine singly is adapted to some territory, or in fact any territory where there is a pretty equal division of "mud and rock," but that the ideal machine would be one in which either type could be used at will and without too much expense. An examination of the drawing will show how readily this can be done in this machine. The rotary is so arranged that its gripping device is entirely separate from the body of the machine and can be slipped out of position by the drillers instantly and set in a corner out of the way. The rotary top then is stripped and perfectly flat so that the standard tools can be used without tearing the rotary from the floor. The bull wheel is always spooled up and the standard tools fastened to the cable so that by simply throwing in the lever the tools are picked up

Cut showing the new "Breitwiser" All Iron, Combinaton, Standard-Rotary Well Drilling Machine. (Copyrighted by California Derrick.)



We present herewith a photo of the very latest improvement in oil well drilling machinery. Patents pending.

For particulars see page 17.

and lowered into the hole. Likewise the sand reel is always spooled and the bailer attached ready for instant use by throwing the lever.

Therefore in five minutes after the pipe used in the rotary drilling process is set in its particular corner the tools of the standard process can be hitting the bottom. Or reversing the process in five minutes after the standard tools are out of the hole and standing in their corner the rotary grip rings can be in place and the pipe going down the hole and drilling by the rotary process begun. There is no need nor ever was a need for two sets of cable drums, two engines or two boilers to cost additional money or litter up a derrick; and this construction avoids this waste and bungling arrangement. It is absolutely complete as either a standard or rotary machine. As a standard simply there need be purchased no rotary, pump, swivels, or hose; but they can be added to the standard at any time desired. As a rotary there need be purchased no sand reel, drilling cable, or standard string of tools but these can be added any time without changing a single thing in the derrick if correctly built in the first place. As a circulating process the pump swivels can be used or even the rotary put on the slow speed to turn the pipe while the standard tools are drilling the bottom. But to my mind this is a useless and expensive process to use in any machine which can use the rotary and standard processes both.

In the use of the calf wheel in pulling heavy strings of casing or removing stuck casing or tools, the power of the pull is increased by placing the sprocket chain on the small sprocket wheel on the crank shaft and the sprocket on the calf wheel which materially reduces the speed and increases the power. As will be noticed in such a case the pull is directly on the circumference of the sprocket wheel of the calf wheel, and at the clutch, which obviates all danger of twisting the shaft or cutting off keys. In this way it is also used for slow speed of the rotary. This is advisable for careless drillers or treacherous hole.

Another novelty and great convenienee is the two or three cat heads for pulling casing in or out and screwing up or unscrewing of same. For this use a cable is wrapped around the heads and several times around the casing and by tightening the cable the casing is turned as fast or slow as desired, somewhat like the moving of a house with a capstan. One side screws the casing tight, the other unscrews it. This obviates the jerk line and come-back used, and the tongs, which latter can, however, be used in connection with the cat heads. Another very quick method and which works unless the casing is screwed together too tight, is to use the rotary itself for this work.

I think now I have described the machine quite sufficiently to convince the man who wants to be convinced that it will save about one-half of the time in drilling a well and will last twenty times as long as the old style rigs heretofore used. At least I have convinced myself of that fact, by actual use of the machinery described.

Think of the convenience of a rig that is always ready for use; that has no lagging, no kicking off center, no bull rope to stretch or slide off, no wooden bull wheel to wear or break, no sand reel to get out of line, or back brake to refuse to work, no necessity to saw tools or casing up or down, no come back or jerk line to use, no engine to stretch or loosen, no calf rope to bother, no wooden calf wheel to pull out of line or break, no crown sheives to fall over, no ropes to throw on or off, no necessity to stand tools on bottom of hole while rope is thrown on and no delays for repairing. But stop—you can't think of it. That is too much for an old style driller. He will collapse.

PYRAMID OIL COMPANY.

The management of the Pyramid Oil Company announces that a depth of a little over 2000 feet has been reached in the well which the company is drilling on section 16, 32-25, Midway, and a strong flow of gas has been encountered for the last 200 feet, and the combination rotary standard drilling rig is in use and very rapid progress is being made, some days drilling more than 100 feet. If present progress can be maintained this well will be completed in from thirty to forty-five days.

SMITH, EMERY & COMPANY REORGANIZE.

Smith, Emery & Company, engineers and chemists, announce the completion of a reorganization of their business, made necessary by its rapid growth and development.

The capital stock has been increased to $100,000, and the latest bookkeeping and filing systems are being installed.

The Los Angeles establishment, which has hitherto been a separate corporation, under the name of Smith-Emery Company, now becomes a part of Smith, Emery & Company, the parent organization.

The personnel of the directing forces of the firm are now: A. L. Emery, president; Emory E. Smith, vice-president and general manager; E. O. Slater, second vice-president and manager, Los Angeles; M. T. MacDonald, secretary; B. R. Putnam, treasurer and manager mining department; W. C. Bass, manager mining department, Los Angeles; Duncan Anderson, chief chemist; Frank Riordan, superintendent cement department; A. E. Roberts, designing engineer.

The laboratories and offices of the company occupy the entire building at 651-3 Howard street, San Francisco, and the Los Angeles branch occupies the entire building and lot, owned by the company, at 245 South Los Angeles street, in that city.

The firm has at present on its regular staff twenty-two engineers, chemists and assistants, and a staff of six associate engineers, and has extensive Eastern, Canadian and European connections.

This firm is playing an important part in the development of the large construction and manufacturing business of the State.

NOT VERY SUCCESSFUL.

Several months ago we gave publicity to the fact that the Los Angeles Oil Consumers Association had been formed in Los Angeles for the purpose of securing oil for its members at a uniform price, and at price, moreover, considerably less than had been paid by the various members prior to the formation of the Association. It appears that its stated demands were for 70,000 barrels of oil monthly, and that it requested bids for that amount. Bids were forthcoming, but not at the rate desired. The oil was therefore not secured, only about one-third of the requisite amount being contracted for and it is only recently, we understand, that the Association has been able to get another 10,000 barrels at a net price of seventy cents per barrel. As there is as yet no pipe line to Los Angeles from the San Joaquin Valley fields, and as there is no adequate supply nearer than the valley fields, it appears to us that the Association would have done much better had it accepted the bid of the Standard Oil Company, or either of the other marketers. Good oil assured at a stated price is far superior to mediocre or inferior oil varying in price and not at all a certainty as regards delivery. Decidedly, we should say, the Oil Consumers Association has not been very successful.

VALLECITOS DISTRICT ACTIVE.

In the Vallecitos field, San Benito county, considerable effort is being made to find oil, the following companies being active at the present time: John Kern Oil & Development Co., on section 21-15-12, has one well drilled to a depth of 2,000 feet; the Range Sixteen Oil Co., 4-17-11, is down 500 feet; New Bedford Oil Co., 6-17-12, is 1-800 feet, and the Vallecitos Development Co., 1-17-11, has a rig up.

This field lies northwest of Coalinga about 40 to 50 miles and is inland some 35 or 40 miles from the coast. It is divided into two districts known as the Big and Little Panoche. Ten years ago considerable development was in progress; 14 different companies were drilling in Big Panoche and five companies were operating in Little Panoche. In what was known as the Hollister district the Hollister Crude, Nonpariel Consolidated and San Benito Oil Co. did considerable development work without success. In 1909 the Union Oil Co. drilled five wells in the Big Panoche district, varying in depth from 700 to 1,200 feet. Three of these wells produced from 30 to 40 bbls. a day of 34 degree oil, but owing to lack of transportation and the more alluring prospects in other parts of the State, the wells were capped and the field abandoned. It is believed that with the decline of the big wells in other sections renewed attention will be given this district, and a good field of high gravity oil be opened up.

Surface Gas and True Natural Gas as Oil Indications.

By J. E. Breitwiser, M. O. E.

There is much confusion regarding the presence of gas as an indication of the presence of oil, and especially much confusion regarding a gas found in surface strata and one found in a true carbonaceous formation. In California as in no other oil country there exists a strictly surface strata of very recent geological age and often of much greater depth from the surface than the real carbonaceous strata in other countries. I shall avoid all technical or expert terms so that the ordinary reader, who is the one who is furnishing the real money to develop the oil territory, may understand my argument. For the expert "crank" I care nothing, because he will argue from the very force of habit while the unsophisticated pays the bills.

As a general thing it may be said that we believe oil is formed from vegetable and animal matter buried suddenly, by a tremendous landslide from either natural or volcanic causes, under at least 900 feet of surface formation, at which depth the natural heat of the earth aided by the pressure and the air tight jacket of the formation, slowly distills the fats into oil, leaving the limes and solids in the shape of a lime stone or calcerous rock. The rest of the vegetation is left in the shape of carbon or coal measures. This is the true oil formation and from it the oil comes either directly as in Ohio, or indirectly from other strata into which it has wandered from some cause as in California and other States in which the oil is encountered in a water gravel. These later States will have several oil strata so-called, which are really nothing but surface strata or water gravel into which the oil has wandered excepting the lower, which will be of geological order or true oil strata. These recent strata will be found to be filled with vegetable remains of very recent date and in various stages of decay while the true oil strata have passed that stage.

In the course of decay the recent strata furnish a gas that usually escapes into the water strata or the crevices of rocks near the surface or wells. In this way it confuses many who take it as a sure sign of oil, which it absolutely is not. The presence of surface gas, by which I mean any gas which comes from a recent formation, is absolutely no indication of oil. Neither is this gas a true "natural gas" in any sense of the word. It is better known as a marsh gas. This gas may come from great depths and yet be not a natural gas. This is true in the center of the San Joaquin Valley where the recent formation is of great depths. At Stockton, for instance, wells almost 2000 feet deep furnish great quantities of this gas and the formation at that depth is almost the same as at the surface. In fact, there, and at Lake Tulare and other points, the drill has passed through trees in a good state of preservation and it is from their decay that this gas is coming.

The true natural gas or carboniferous gas is found in the true oil formation, which formation, by the way, is far beneath the water strata which furnishes fresh water but usually is saturated in its lower depths at least, with salt water. The gas is formed to a great extent by the action of salt water mixed with sulphur water upon the limestone, and is a dry gas, escaping as such, and not in solution of water as the surface gas is escaping. It is often found in great quantities miles from any oil formation as I happen to know positively from the drilling of wells; and from the logs of the gas wells of the East. Here the formation is surface for a few feet only, when it runs into limestone which continues to a depth of about 600 feet. Then a "break" or cinder formation is encountered which carries sulphur water. Below this the true shale (not the formation Californians have had palmed off onto them for a shale) is encountered, which had originally carried the vegetable and animal remains; and below this at depths of about 1400 feet is found the Trenton limestones. In this Trenton limestone great cavities are encountered and in these the oil is found. When this pool is emptied of its oil the well goes into salt water and if no oil is encountered it frequently is filled with true natural gas in great quantities and under great pressure. After the pressure is relieved these wells quiet down to a small regular supply which seems to remain the same for years. This fact is always encountered in all these wells whether oil, gas, or neither: namely, salt water is at the bottom of all the holes. It is also true that if the drillings of this Trenton limestone, which is nothing more than shell or bone matter, are placed in sulphuric acid, they will release natural gas of the same composition as that from the wells. This is proof enough to us that if sulphur water mixes with the salt water or if the salt water pure is found saturating the Trenton limestone it will manufacture the natural gas, and for this reason we believe this the true origin of most of the natural gas found in the oil regions. The salt water as it is taken from the wells will slowly form the gas from these drillings, as I know. There is also much gas formed from the slow distillation of the oil without a doubt, and as both these gases are from the same animal and vegetable strata originally, this composition would be and is the same.

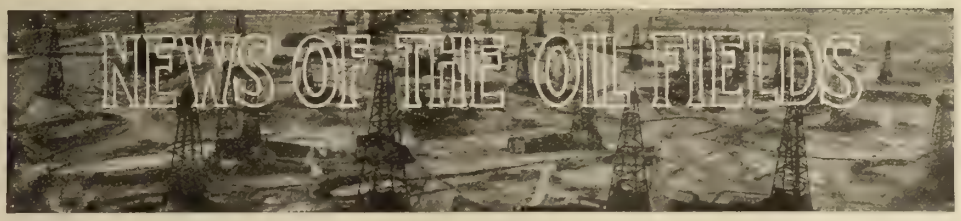
From these facts—known to every driller who has been in the various fields of the world—it is safe to state positively that a surface formation gas, though it comes from great depths, is no indication of an oil formation below it, and that a surface gas which will usually be found in a water-bearing strata is not a true oil formation product at all.

From this I conclude that a true natural gas will be encountered in the same strata that originally bore the oil from which it may wander under the same conditions as the oil itself, but that it will never be encountered in a water-bearing strata except salt water, unless as a result of an accident, or a fault.

Further, that a true natural gas is produced by the chemical action of acidulated water on limestone, or heat on vegetable or animal matter buried more than 900 feet under the surface.

BOSTON PACIFIC TO USE MAGNET.

The Boston Pacific Oil Company, section 32, 31-24, is having an electrical magnet aparatus installed for the purpose of recovering tools dropped down the well. Both cable tools and a rotary bit lie at the bottom of the 700-foot hole. The magnet is the same used recently in Coalinga, with such signal success. Its work and use were reported some time since in the "*Derrick*."



COALINGA---By Guy H. Salisbury,

California's Best Known Oil Correspondent.

Meeting of the Directors of the Independent Oil Producers' Agency.

The meeting of the directors of the Independent Oil Producers' Agency, that convened at Bakersfield, February 1, was well attended. Matters of great importance were to be acted upon, as contracts had been made with consumers in new territory, and the executive committee desired that their action be ratified. From what has been given, (the meeting was held behind closed doors) we may say that the executive committee was sustained on all but one count, that of the sale to the Associated Oil Company of some 4,000,000 barrels of storage oil. The debate was sharp, but not personal; the men from Coalinga, with three exceptions, were solid in their refusal to approve that clause, preferring to pay storage on this surplus oil rather than sell at a price net to the producer of about 32 cents. There had been much complaint made, by many oil operators, of the wisdom of the Agency in not moving this storage oil at some price. When it came to a vote, after the arbitration committee had passed upon the deal, the operators in favor of this move did not attend the meeting. The feeling among the oil men in attendance at this meeting was that consumption was overtaking production at a rapid rate, largely due to the exhaustion of the Lakeview gusher; that within the year the Agency would be in need of the 4,000,000 barrels surplus; that was the argument ably presented by H. H. Welsh and S. A. Guiberson, Jr., and they won the day.

New Northern Contracts.

The new northern contracts will go into effect about July 1, 1911. This is new, competitive business, and will increase in volume year by year. The great increase in railroad transportation business to the West, and the growing demand of the traveling public for oil-burning engines, in order that they may be free from the annoying smoke and "cinders," are having their effect. There appears to be no question about the improved conditions along the lines of consumption of oil, as gathered from members of the Agency, and we are of the opinion that the directors have acted wisely in declining to accept the bid of the Associated Oil Company.

Interesting Mineral Locations.

It is quite interesting to watch the proof of labor filed this year on the various fields, especially so wherein the lands of the Southern Pacific Company are effected. On January 27, 1911, Othello Scribner, secretary of the Associated Oil Company, makes proof of labor on "No Chance Placer Mining Claim," situated on section 7, 20-15, being the southeast quarter of the northwest quarter, and the west half of the northeast quarter, known in this field as the "Arica Oil Company." That there has been expended in development work over $100 there is little doubt; there are eight wells on the property producing, from which $118,218.04 has already been realized from oil sold. This property was leased from the Southern Pacific Company, by Louis Nathan, under lease No. G. 75, in December, 1902, and a sub-lease to Porter & Scribner was ratified. The royalty is: 1-6 f. o. b. Ora Station. It is presumed that mineral locations were filed last spring. There was proof of labor filed by G. Sheridan, R. T. Fisher, O. G. Williams, W. A. Sloan, W. E. Buck and E. Whitehead, on "Chance Mining Claim," section 31, 19-15, being the southeast quarter of the southeast quarter, and known as the "Aztec Oil Company," from which $75,455.14 has been realized on oil sold therefrom. Mineral locations were made last spring, it is presumed. Though claimed by the Southern Pacific Company these tenants have located and have filed proof of labor, giving a tinge of doubt as to the stability of the Southern Pacific contention that their title under a "patent" is valid, or that the reservation of the mineral is effected thereby.

Scene on the property of the Coalinga Eight Oil Co. mentioned by Guy H. Salisbury

Coalinga Eight Oil Company Gets Excellent Well.

The Coalinga Eight Oil Company, section 8, 20-15, well No. 1, completed last month, the well shown in the background of the accompanying photograph, near the boiler house, started off at 300 barrels and has steadily increased her production. It is now producing nearly 500 barrels per day, free from water and silt. Well No. 2, to the left, near the lake of oil, was drilled to 2000 feet with a rotary and is now being carried down with cable tools; present depth, 2200 feet, with 10-inch casing. Well No. 3, to the right and reflected in the lake of oil, has been carried to 2000 feet with the rotary and the cable tools are now strung up and the well will be carried to the pay sand with standard tools. Mr. J. A. Boggs, of the Imperial Oil Company, and Mr. Mark, of the New Southern Hotel, Bakersfield, are heavily interested in the Coalinga Eight Oil

Company. The "Lake of Oil" is on the Coalinga National Petroleum property. W. J. Nichols, photographer.

Progress of the P. C. Oil Company.

The P. C. Oil Company, section 28, 26-21, are credited with negotiating a depth of 518 feet of hole in less than three days with a rotary rig, carrying a 14-inch hole for the 12½-inch casing. "Zed" Phelps reports the work progressing very satisfactorily, but also states that the wells will all be shut down. The rain has shut down the Coalinga road that was laid out along high ground, as the low places crossed have become saturated by the present storm. Work will necessarily be suspended for a period until the roads become dry.

K. T. & O. Improvements.

The Kern Trading and Oil Company are putting in a high pressure pump at their water well station on section 7, 20-15, to supply their property with drilling water. There are to be nine new drilling rigs on section 11, 19-15; on the southwest quarter one well is producing 200 barrels per day; there are two producing wells on the northwest quarter.

The present storm has demonstrated the utility of the dumb brute—the horse and the mule have been the front attachment to many an auto the past ten days throughout this oil field. At present there are several machines "waterlogged" between here and the Lost Hills, the occupants having been transferred to town by the Nineteenth Century method—horsepower.

Bohemian Has Entered Productive Oil Sand.

The Bohemian Oil Company, section 22, 21-15, are reported to have drilled through the shell under the first pay sand, and have entered a more productive oil than the first, having about 30 feet of very lively sand, with the gas and oil showing up through 2300 feet of water and every indication of a big well. The present storm has made the roads about impassable, and as there is no telephone line to the property it is very hard to ascertain the exact extent of this second strike.

United Development Has Nice Production.

The United Development Company, section 19, 20-15, well No. 1, is producing about 500 barrels per day; the dead oil has been pumped off the well and the oil is now coming without any sand. Well No. 2 is 860 feet deep with 12½-inch casing; well No. 3 is over 180 feet deep with 16-inch stovepipe casing.

Azores Suffers Damages—Cements.

The Azores Oil Company, section 26, 21-15, had their pumping station badly damaged by the recent storm; the pump was carried away but the damage will soon be repaired. The job of cementing has the appearance of shutting off the water; the cement plug will be drilled out as soon as the weather will permit of handling supplies.

Berkeley Coalinga Flowing About Fifteen Barrels.

The Berkeley Coalinga Oil Company, section 2, 21-14: Well No. 1 is flowing very steadily, making about 15 barrels, or more, per day from a depth of about 300 feet. This well was drilled in with a light portable rig; the oil is about 20 gravity. Two light standard rigs are to be erected at once, as soon as weather conditions will permit. These shallow wells are very inexpensive.

Operators on S. P. Land Will Soon Drill.

The Hinkley-Apple-Burke interests, who located on Southern Pacific lands in March of 1909, have erected small cabins on each quarter section on sections 3, 11 and 23, 19-15, and on section 5, 20-15. Word has been passed around that drilling will soon be started. These same parties have located on S. P. lands in the Maricopa and Midway fields.

Republic Oil Company's Progress.

The Republic Oil Company, section 32, 19-15, are drilling in well No. 1 with oil; they are now over 2500 feet deep, having entered the oil sand at 2450 feet, at which depth they have a good showing of oil and gas. Drilling with oil is very slow work, but it will detect water in the oil sand. The company is "going right ahead."

GROWTH OF THE SUPPLY BUSINESS.

The growth of the supply business in this field has been very noticeable the past year. The volume of business was not as large as during the "boom days," but was along conservative lines. The great activity in the Kettleman Hills, where actual development has been in progress the past year, and the work of developing the Lost Hills, by Coalinga men, has had its influence on the increase of the supply business. The belief that Congress would afford relief from the rulings of the Land Department, as voiced by influential men high in the councils of the government, at Washington, had much to do with the stocking up of the leading supply houses last fall in this field. It is generally believed that the remedial legislation needed will pass Congress at this short session, and therefore, that the vast amount of capital invested in the oil industry shall be protected.

The managers of the great supply houses—and no better barometer of the oil business exists—have demonstrated their faith in this field, in the oil industry in fact, by their action last fall. Among the older houses in the supply business, the Oil Well Supply Company and the California Supply Company were abreast the first move made by their younger competitors. The J. F. Lucey Company, the Fairbanks Morse Company and the Union Tool Company were the first to recognize the needs of the field. The Associated Supply Company and the Kern Trading and Oil Company followed the lines looking for increased activity.

The J. F. Lucey Company has been the most active among the supply companies in this State during 1910. The business was inaugurated in this field and now has a branch in every active field in California. The growth of the business took the main office from Coalinga to Bakersfield as the then logical headquarters, but the demand soon made it necessary to establish headquarters at Los Angeles, from which point the entire business of the company is handled, with local managers in every field in California. During the summer of 1910 the president of the company, J. F. Lucey, devoted several months to the study of the conditions of the oil industry in connection with the oil well supply end of the business; this investigation included the Gulf States and one of the results of this trip has been the establishment of an eastern department, with headquarters at Chicago, Ill., and with main offices at Tulsa, Okla., and Shreveport, La. A report received here during January indicates plans of the Board of Directors to carry the supply business into every oil camp of America. The wonderful growth of the oil business, the development of the oil fields, has been very largely assisted by the great activity of the heads of the supply business in reaching out ahead and assisting the operator. Again, the continued increase in consumption, both of crude and refined oils, has done much to inspire confidence in "the men in front". The J. F. Lucey Company was first organized at $500,000.00, it is now reported that the capital is to be increased to $1,500,000.00, found necessary to handle the ever increasing volume of business. Coalinga has a local pride in the oil well business that is done through this station, and especially so with the growth of the J. F. Lucey Company. Captain Lucey is ably assisted by T. B. Clarke, Jr., Vice President, who will have charge of the eastern branch of the company's business. Another feature of the supply business, that has called attention to Coalinga, has been the number of improvements made in tools to more economically handle the labor end of the industry in the field. Patents have been granted for the Baker shoe, the Madderen tongs and the Corey improved casing tongs, and other appliances needed in the successful handling of an oil property.

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IN TOUCH WITH THE SITUATION.

While all the journals and publications in the State of California which are professedly devoted to oil were avowing and asservating that the production during December was to be noticeably smaller than during November, we were not at all backward in stating what we actually believed and what afterwards proved to be the case, to-wit: that the production of the State for December, 1910, would approximate 6,250,000 barrels of oil, in spite of all the talk to the contrary. Even the inspired "conservative" estimates of our contemporaries bears us out; and, admittedly, they have made their figures just as small as they possibly dared, apparently fearing to present the true facts to their readers because they don't want them to know how much oil we actually have on hand, although there is absolutely no reason to deceive them as the oil is by no means a "plethora on the market." These papers gave their "conservative estimate" for the December production as "approximately 5,000,000 barrels." Conservative; well, decidedly YES, it WAS conservative; to the extent of being just about 1,500,000 barrels of oil short of the actual production.

Readers of the *California Derrick* will find that they get the true state of affairs just as far as that state is ascertainable; and that the management of this magazine is managing it for just one purpose: to give the oil men in this State and its readers generally the truth and nothing but the truth. All that we wish to say to our readers is, that we justify ourselves to them by the facts, and not by words; and that we stand upon our record as an authentic medium of oil news and as a purveyor of the best scientific information in regard to petroleum obtainable, when we request their money for subscription to the *Derrick*. We feel that an outsider can actually *keep in touch* with the oil situation in California by reading the *Derrick* better than through any other medium.

A MAGNIFICENT OPPORTUNITY WHICH MUST BE TAKEN ADVANTAGE OF.

The great Panama-Pacific International Exposition is ours—it belongs to the West, not alone to San Francisco, the West's greatest and most loved metropolis. All the world will be represented here, at the entrance to the Golden Gate. Our wonderful West will show, as never before, what opportunities, what accomplishments, what strength, what grandeurs, what mighty resources, what unguessed at, not generally known but nevertheless existing wealth of every description it possesses. The glory of the land will shine out in unparalleled brightness—and ten millions of people, who have all their lives heard of the magnificence and riches and beauty of the West will come, from every corner and isolated spot on the globe, to view one of the greatest of all great expositions; will come into the realization of years of anticipation.

The glory of the nations will meet at our fair. A vast coucourse of all peoples will come to see their own exhibits, to compare them with those of their neighbors, and those of the rest of the world.

The splendor of the land will be reflected in its crops. Each State of the United States will send its best products. Each county of California will be represented by its most famous production. The older countries will send here their priceless arts and crafts; the ancient hand-crafts and the modern machine-made products will be displayed to the utmost advantage—probably as never before for the *West* has *always* outpointed its competitors in whatsoever its energetic sons have striven to do. And now they are striving to give the greatest exposition that has ever been given; and they *will* give it.

What has all this to do with the Oil Industry? Why does the conservative *California Derrick* enthuse in this manner? WELL:—

The *California Derrick* sees here the most remarkable opportunity that has ever been presented to the industry it faithfully tries to represent, to display California's most valuable product.

The OIL INDUSTRY should have the greatest of all California's exhibits.

The Oil Industry! The industry which has given California its premier position as a manufacturing site within the past ten years! The industry which has provided the cheapest known fuel in existence; the industry which furnishes the power to turn our mill wheels, to haul our trains, to heat our buildings; which furnishes employment—lucrative employment, to thousands of the best men in the land; the industry, indeed, which makes possible California's ascendency among all empires as a State of the greatest wealth, the most marvelous resources!

The Oil Industry MUST be represented; and represented in a way which will permit the entire world to know what it means to California!

Oil men of California! YOU it is who must see to this. From the time that the derrick's first cross-beam is laid until the rich black fluid which has made more millionaires in California than any other source of wealth furnished by our prolific soil, comes out of the earth, the process of drilling a well should be displayed. The tools should be shown. The derrick should stand high. A real driller—not a dummy in brass buttons—should be on hand at all times to explain that the exhibit is not a meaningless lot of lumber, pipes and tools scattered here with a purposeless aim; that it represents, in its way, millions upon millions of dollars. It would be well, too, if a miniature refinery could also be constructed; and every product that is turned out of the great refineries in our State should be displayed so that an adequate idea of what oil means to California can be gained by the most disinterested of persons. Everything that can possibly be done to further the interests of the Oil Industry should be done. For this magnificent opportunity ought not to be neglected. The *California Derrick* feels certain that the oil men of California will not be behind their fellows when the time has arrived to display—

California's Most Wonderful Source of Wealth.

ANNOUNCEMENT CONCERNING DIVIDEND SHEET.

We understand that from now on there will be no regular monthly dividend and stock report issued by the San Francisco Stock Exchange, for which reason the *Derrick* will discontinue making a monthly report, but will report quarterly. The first official quarterly report to be issued by the Stock Exchange officials will appear on or about the tenth of April. The *Derrick* will, however, keep its readers in touch with the ruling prices as each issue goes to press by giving the regular daily quotations issued by the Exchange. It is rumored around the Exchange that several companies now making monthly distributions will hereafter make their distributions quarterly.

REPRESENTATIVE S. C. SMITH'S REMEDIAL LAW PASSED BY CONGRESS.

As we go to press we receive the information that Representative S. C. Smith of Bakersfield, has succeeded in passing his remedial bill in the House, annulling the Yard Decision of the Department of the Interior. Of all the news that has been disseminated lately this news will be received with most joy by those whose titles are in jeopardy, and which have been in jeopardy for some time past. According to the dispatch just received the Smith Bill as passed reads as follows:

"Be it enacted that in no case shall a patent be denied to or for any lands heretofore located or claimed under the mining laws of the United States containing petroleum, mineral oil or gas solely because of any transfer or assignment thereof, or of any interest or interests therein by the original locator or locators or any of them, to any qualified person or persons, or to a corporation prior to discovery of oil or gas therein; but if such claim is in all ther respects valid and regular patent therefor not exceeding 160 acres in any one claim shall issue to the holder or holders thereof as in other cases; provided, however, that such lands were not at the time of entry into possession thereof covered by any withdrawal."

This bill settles the Yard decision controversy effectually. It also gives the interests just exactly what they have been contending for. But what the conservationists will get out of it to create any satisfaction in their midst is problematical. It will be noticed that a "leasing clause" is conspicuous for its absence; and that all the other matter that certain other interests have urged during the last twelve months has likewise been passed over without comment, mention or notice. But comment is superfluous; it will be better received when the oil men have had time to consider the new order of things.

COMMENT OF THE PRESS.

The January number of the *California Derrick* is an unusually interesting publication. In addition to the latest current news of the oil fields, for which this journal has earned a reputation, the January issue contains complete statistics of production for the year 1910. It shows that the greatest monthly yield was in July and the smallest in January, while the total for the twelve months reached the enormous total of 76,219,506 barrels. There are carefully prepared special articles, including three scientific and geological reports that will be of interest to all who are interested in California's great industry. The editor, Charles C. Wright, is to be congratulated upon the many excellencies of his useful and instructive journal.—*S. F. Chronicle.*

LETTERS FROM OUR SUBSCRIBERS

(From J. E. Koeberle, Supt. Wellman Oil Company).

Maricopa, Cal., Feby. 5th, 1911.

The *California Derrick*, 649 Pacific Building, San Francisco, California.

ATTENTION MR. C. C. WRIGHT.

Gentlemen—Yours of the 1st I found here on my return from Los Angeles, and I am obliged to you for Mr. Cooper's address and shall write him. While at Bakersfield yesterday I called Mr. Wm. N. Forker's attention to Mr. Cooper's proposition and he was considerably interested and is anxious to get hold of a copy of your paper on the matter. He is the Water Commissioner for the West Side oil field, and I would suggest that you send him a copy.

I believe that Cooper's method is far ahead of any cementing job for many reasons. The most important likely being, that with the aphaltic cementing there is some pliability. Many good cementing jobs have been spoiled during the drilling out of the cement after the cement has become set and rigged. Another point against the cementing is the change of temperature in a well from time to time under which greater or less expansion of the casing is taking place and when the contraction takes place it takes the pipe away from the wall of the cement, leaving a crack or space for the water to pass down. With asphalt this would not occur and the gum would apply itself to such conditions exactly and at all times keep everything sealed by its buoyancy. Of course a trial will demonstrate the matter but I have a great deal more faith in it than any possible cementing job the percentage of which is greatly against it for successfully shutting off water.

I subscribed to your paper in the name of this Company some time ago. I take them all, both East and Western publications and several from the old country. The *Derrick*, I find the best authority of any Coast publication and shall always want it in my file.

Yours very truly,

(Signed) J. E. KOEBERLE.

(From Allan G. Nichols.)

Los Angeles, February 3, 1911.

Mr. C. Carrall Wright, Editor *California Derrick*, Pacific Building, San Francisco, California.

Mr. Dear Mr. Wright:—I wish to congratulate you on the appearance of the *California Derrick* for the past year and more especially on your January issue, containing as it does, your resume of the principal events in California oil circles as shown by articles appearing in the *Derrick* for the past twelve months.

I have especially enjoyed the articles running the last year by Mr. Prutzman, of the State Mineralogist force, and Professor Cooper, Ex-State Mineralogist. Though, where all the articles are so good, it is extremely difficult to specify which are the best.

Trusting that your success in the future will be as great as the excellence of your publication deserves, I am,

Yours respectfully,

(Signed) ALLEN G. NICHOLS.

FC-N

(From Admiral Evans.)

February 2, 1911.

Mr. C. C. Wright, Editor and Publisher, *California Derrick*, 649 Pacific Building, San Francisco, Cal.

Dear Mr. Wright—I want to express my thanks for the interesting articles about the California Consolidated Oil

Company of which I am president, which you have seen fit to print in the *California Derrick*. They have been able, unprejudiced and in accordance with the facts.

I have also enjoyed the scientific articles which you have been carrying and I believe they will prove a valuable contribution to the oil history of the State.

I thank you for your invitation to contribute to your pages, but I am too busy at present to consider any further literary wor.

With best wishes, I am,

Yours very truly,

(Signed) R. D. EVANS,

President California Consolidated Oil Co.

STANDARD OIL CONSTRUCTING ANOTHER PIPE LINE.

The official organ of the Standard Oil Company, the *Oil City Derick*, of Oil City, Pa., has printed the following dispatch from the *Los Angeles Times*, in regard to the construction of a new pipe line by the Standard from the Kern County oil fields to Pt. Richmond:

One of the most important things that has happened to the oil industry of California for many months is the announcement that the Standard Oil Company has already taken steps to parallel its big pipe line from the Kern County fields to Point Richmond, where its great refinery is located.

The consummation of this project will entail an expenditure of from $1,000,000 to $2,000,000 at least, and as usual with the big fellows, the work was actually under way before anybody aside from the officials of the company knew anything about it. Work has already been begun upon the pumping stations along the route, and it is understood that 50 carloads of pipe are now on the way to this State from the eastern mills.

The completion of the parallel pipe line of the Standard wil give that corporation a daily oil-carrying capacity from the fields to the coast of close to 50,000 bbls. Aside from everything else, the construction of this additional pipe line is an earnest of the big company's faith in the future of the California oil industry, and will give heart to many other investors who like to follow the lead of great aggregations of capital.

It will be remembered that only a few days ago the Times made the announcement that the Standard Oil Company would duplicate its Point Richmond refinery at some point near Los Angeles at a cost approximating $3,000,000. This decision is due to the handicap of shipping the crude oil to Point Richmond, and later shipping the manufactured products to this city where a big market has been built up within the past few years. The Standard has lately made large land investments in the vicinity of Los Neitos, close to the Whittier oil fields, but it is problematical whether the new refinery will be built there or at Redondo Beach.

It will be noted that the announcement is carefully worded, but that does not prevent the various oil men and interests at variance with the Standard from wondering if the big company is going into the fuel oil business in competition with other great marketers.

MAY BUILD REFINERY IN SOUTH.

It is now said that the acreage purchased by the Standard Oil Company at Los Nietos, in the Whittier field, which was looked upon as a site for a tank farm when first bought, is in reality the site for a refinery which is to be started within the next two or three months. "Capitalists" of that locality are alleged to have gambled to the extent of $1,500,000 in real estate on the strength of this rumor. One fact which lends a slight shadow of reason to the rumor is that the company has made a contract with the Central Oil Company for its production, as stated in our last issue, and if a refinery were to be built at Nietos, the residuum could easily be disposed of in Los Angeles. But so far there has been neither confirmation nor denial on the part of the company's representatives.

STANDARD OIL WILL PIPE NATURAL GAS TO SAN FRANCISCO.

The management of this magazine has received positive information from an inside source, and one which it is impossible not to credit, that the Standard Oil Company is contemplating and has actually made all plans for piping its gas from the Buena Vista Hills to San Francisco, to be used here in competition with the manufactured article. We fully expect that this report will be denied by officers of the Standard, and that they will affirm that it is possible their company *may* pipe gas into Los Angeles, and this is untrue, an unfounded rumor, etc., etc.; but the fact remains that a high authority, whose name we are not permitted to divulge, has given us assurance that whatever may be said to the contrary, Standard Oil *will* pipe its gas to San Francisco; and furthermore that it not only has no intention of piping it to Los Angeles, but that it has in contemplation the subjugation of certain San Francisco interests which are understood to have been hostile to the great corporation.

The *California Derrick* DOES NOT stake its reputation for veracity upon this report, but considers that its truth is highly probable; and expects to have the statement substantiated by actual developments in the near future.

KERN RIVER BREVITIES.

We have culled the following reports on Kern properties from various oil news sources:

The Kern Four Oil Company has a flowing well on its lease which flowed intermittently for some time. The well is considered a "freak" inasmuch as a "gusher" in Kern River is almost unbelievable.

The Ojai Valley Oil Company, which has forty acres in Kern and 140 acres in Santa Paula, is shipping two rigs to the latter property from the former, owing to the extra amount of oil on hand on the Kern River lease.

The Merchants & Bankers Oil Company has completed well No. 4 with a good production; well is on pump.

MAY BUILD REFINERY.

There is considerable talk going the rounds of the press to the effect that the Associated will build an oil refinery at Port Costa and enter the refining business in competition with the Standard, and aligned with the Independent and Union. It is too early for us to give anything on this matter; the truth is, we haven't been able to learn anything about it and for this reason believe that developments had best be awaited. Thees sensational stories have a way of coming back, like a boomerang, and striking their source. When the buildings are started we will believe, or when the Associated acknowledges —but it is a little early yet to take the rumor too seriously.

ERECT DERRICK IN CITY LIMITS.

Quite a little comment was made recently over the fact that the K. T. & O. Company—(S. P.)—had erected a rig on the western edge of the city of Taft, directly in front of a public highway. This rig was erected to offset the Standard's well on section 14, almost directly opposite it. It is said that the company is about to start the erection of twenty-one more rigs in the immediate vicinity of the town to offset the Standard's wells .It is also said that the company will remove the road-blocading rig.

Authentic Information About the Foreign Oil Fields.

THE OIL REGION OF SUMATRA.

(By U. S. Consul-General James T. DuBois, Singapore.)

Note.—We are enabled to publish this interesting matter through the courtesy of Mr. Allan G. Nichols, who wrote Mr. DuBois for the information in order to publish it in the "Oil Industry," which magazine has since gone out of existence. Mr. DuBois wrote Mr. Nichols:

I give below such data as I have been able to obtain on the subject of the "Oil Producing Region on the Island of Sumatra." Following is a quotation from "Twentieth Century Impressions of Netherlands India":

The petroleum industry in the Dutch Indies is of recent date. In 1863, it is true, there were several points known in Java, Madura, and Sumatra, where oil occurred, but it was not till about 1890 that the first production of petroleum took place. Within a short time, the industry, owing to powerful organization, developed into one of the most important in the country. Not only was it able to hold its own with American and Russian competition, but it found an opportunity to place its products in the whole of South and East Asia, and even in Europe.

The chief petroleum fields are found in the residencies of Rembang and Sourabaya, in Java; Palembang, the East Coast of Sumatra, and Atjeh, in Sumatra; and the region of Koetei, in Borneo. It is above all the "Koninklyke Nederlandsche Maatschappij tot Exploitatie van Petroleumbronnen in Nederlandsch Indie" (The Royal Dutch Company for Working Petroleum Springs in the Dutch Indies), established in 1890 and often called for short "De Koninklyke" ("The Royal"), and the "Dordtsche Petroleum Maatschappij" ("Dordrecht Petroleum Company"), established in 1887, to whom this success is due."

With regard to the geology of the petroleum strata there is not much published. In general, it may be said that the oil is found in late miocene strata, and that its occurrence is a confirmation of the anticlinal theory of Hofer and others.

The shafts are usually sunk according to the Canadian method. There is, however, likewise the washing method of boring. Eruptive oil springs are often struck. Some springs yield very large quantities of oil. Thus from one spring on the concession of Telaga Said, in Sumatra, 8640 litres of oil per day were obtained in 1885, by pumping through a bore hole of 31 metres depth. In 1887, the yield increased to 23,000 litres per day.

In chemical and physical properties, the Indian oils agree partly with the Pennsylvania and partly with the Russian oil. The oil of Java and Sumatra possesses in general a low specific gravity and high contents of benzine and lamp oil; the oil of Borneo, on the contrary, is mostly heavy, and contains a great deal of residue. In addition to lamp oil, benzine, gasoline, lubricating oil, vaseline, paraffin, and asphalt are obtained from the crude petroleum. The residue is already being used on a large scale as fuel on board steamships and in some factories.

The number of petroleum concessions in Java amounted on June 30, 1908, to twenty-eight; on the possessions outside Java and Madura to thirty-three. We give below the production, in tons of 1000 kilogrammes, for the years 1907 and 1908 of some of the most important:

Name.	Region.	Tons—1907.	Tons—1908.
Moeara Enim,	Palembang	135,605	112,650
Karang Ringin,	Palembeng	18,562	14,236
Bandjarsari,	Palembang	19,986	20,902
Babat I,	Palembang	20,289	14,546
Soeban Djerigi,	Palembang	79,184	105,516
Lematang,	Palembang	22,940	25,336
Telaga Said,	East Coast of Sumatra	11,525	9,493
Boeloe Telang,	East Coast of Sumatra	164,635	134,519
Peureula,	Atjeh (Achin)	229,433	229,558

Appended is a statement of the total petroleum production since 1903:

Year.	Tons.
1903	870,000
1904	1,049,000
1905	1,200,000
1906	1,301,000
1907	1,328,000
1908	1,255,000

The crude oil obtained is refined in the great refineries of the Dordtsche Petroleum Maatschappij at Wonokromo and Tjepoe, and of the "Royal" at Pangkalen Brandan, Bajoeng Lentjir, and Balik Papan.

Following is a quotation from the "Production of Petroleum in 1904 by F. H. Oliphant"

Sumatra has by far the largest production, amounting to about 70 per cent of the entire output of Dutch East Indies, Sumatra, Java and Borneo, a large portion of it being petroleum of a paraffin base. Sumatra also contains the largest refineries. The quantity of petroleum produced and of refined petroleum exported has increased yearly since 1900. This has been accomplished by the development of new fields after the failure of the original fields, which made it necessary to build many miles of pipe lines.

Following are the principal companies in Dutch East Indies:
Royal Dutch Petroleum Co., Sumatra.
Palembang Petroleum Co., Sumatra.
Moeara Enim Petroleum Co., Sumatra.
Moesi Ilir Petroleum Co., Sumatra.
Mining and Exploring Co., Sumatra.
Perlak Petroleum Co., Sumatra.

REPORT ON THE MAIKOP OIL FIELDS OF RUSSIA.

Ambassador W. W. Rockhill, at St. Petersburg, Russia, has sent the Bureau of Manufactures of this country a report on the Maikop oil fields. The report is rather lengthy, for which reason we will give merely the substance of it. The main features are:

The Maikop oil fields are situated about fifty miles from the shores of the Black Sea. It was originally thought that the fields was twenty-five miles long and twenty miles wide but it has now been ascertained that the practically valuable territory is not more than one mile in width at its greatest, although this strip is prolific territory. The Russian government is at the present time endeavoring to help the developers of the field in every possible manner, and is anxious to have it developed by responsible people rather than speculators, and to this end desires foreign capitalists who mean "business" to invest here. It is also stated that transportation for the oil is very poor; that there is a crying need for good roads and that while several pipe lines are under construction there seems no immediate danger of their completion.

PETROLEUM IN BRITISH COLONIAL POSSESSIONS.

United States Vice-Consul-General Henry S. Baker, at Sydney, Australia, has recently reported to the Bureau of Manufactures on petroleum conditions in that country. Consul Baker's report in brief stated that the Parliament of Australia has passed a bill providing for the payment of bounties on the manufacture of kerosene and paraffine wax from Australian shale. A sum of $243,000 has been appropriated for the purpose for three years, commencing July, 1911, within which period the goods must be produced to be entitled to the bounty. The schedule provides that the rate of bounty shall be four cents a gallon on kerosene, having a flashing point not lower than 73 degrees Fahrenheit and on refined paraffine 60 cents per 112 pounds. Some shale oil has been manufactured, which yields a portion of illuminant, paraffine and gasoline. The imports of petroleum into Australia last year amounted to 19,994,000 gallons, valued at $3,061,800, and of paraffine the value was $359,640. At the present time the United States furnishes the greater part of the oil consumed in Australia.

ADOPTION OF FUEL OIL BY WESTERN CANADIAN NAVIGATION AND RAILWAY COMPANIES.

The following report has been sent to the Bureau of Manufactures by Consul A. E. Smith, from Victoria, B. C. It bears directly on the sale of California fuel oil as it notes the adoption of same by railway and navigation companies:

"The Canadian steamers sailing from this port in coasting service, including two steamers belonging to the Grand Trunk Pacific Railway and seven steamers carrying the flag of the Canadian Pacific Railway, are all about to be converted into oil burners.

"Two American steamers, which occasionally come to this port, belonging to the Puget Sound Navigation Company, have been using oil fuel very successfully for two years past, and the tests made finally satisfied the Canadian companies that oil is not only better, but vastly more economical than coal. Several Japanese turbine liners, which call at this and other Pacific ports, have used oil fuel for years.

"The use of oil fuel by the Coast steamers will, it is stated, reduce the fireroom staff on each vessel by two-thirds, the stokers being eliminated. The cost of the oil itself is practically as great as coal, but the saving of labor, of weight carried, and in hauling, etc., is great. The supply of oil is to be kept at Vancouver and Seattle, where large tanks for storage of sufficient oil for the company's steamers will be maintained. All the company's steamers call at Seattle or Vancouver, and they will take on their supply of oil at one or the other of these ports.

"For about two years the Canadian Pacific Railway has had an offer from the Standard Oil Company to supply oil at a fixed price covering a long term of years, and has finally determined to equip all Coast steamers for oil fuel as rapidly as possible, during the winter season (two are already so changed), and probably also the Empress liners, which sail across the Pacific. It is even intimated that it is probable the locomotives of the Pacific division of the Canadian Pacific Railway may also be converted to burn oil."

SHALE OIL DEVELOPMENT IN NEW BRUNSWICK.

Consul H. S. Culver, at St. John, New Brunswick, has reported the following on shale oil development and exportation of the oil, to the Bureau of Manufactures:

"After many unsuccessful attempts to develop the mineral-oil industry of New Brunswick, in connection with the shale deposits of Albert and Westmoreland counties, it now appears that, as the result of tests made of samples of the shale in Glasgow, a company of English and local capitalists has been organized with a capital stock of $5,000,000, of which $3,000,000 will be expended in the initial plant.

"The Glasgow report states that from about 37 tons of shale subjected to distillation a little more than 1473 gallons of crude oil and 2486 pounds of sulphate of ammonia were produced. From 100 gallons of the crude oil the following products were obtained, the several amounts being given in gallons: Gas oil, 13.04; burning oil, 11.50; lubricating oil, 11.03; crude wax, heavy naphtha, cleaning oil, residuum, 8.52; total, 44.09 gallons. The company will not only distill the crude oil but will also refine the product, thus making the venture one of the great industries of the eastern provinces, which will employ thousands of men."

SAVING AT PANAMA BY USE OF OIL FUEL.

Following is a clipping from a dispatch to the Bureau of Manufactures which shows the economy effected by the adoption of oil burners on the Panama railroad:

"The substitution of oil for coal as fuel on Panama railroad locomotives is said to have resulted in economy and traveling comfort. The conversion of burners costs $340. There is a saving of about 50 cents per 100 miles in passenger service, and $2.80 in freight service. The engines are giving far better service with the oil burners, as the maximum of steam can be had at all times, insuring higher tonnage and no delays for lack of steam."

GROWTH OF RUSSIAN PETROLEUM EXPORTS.

The Bureau of Manufactures has received from Consul George Horton, at Saloniki, the following details regarding petroleum importations into the Saloniki district, and the sources of these importations, in the following letter:

"The importation of Russian petroleum into the Saloniki district is increasing despite Hungarian competition, which is handicapped by higher freights. As nearly as can be ascertained the imports of petroleum into this district in 1909 were as follows, in cases: Russian, 370,000; Hungarian, 50,000. The figures for 1910 will show a decided increase.

"American petroleum is imported in small quantities, but on account of the higher demand is not important, despite its acknowledged better qualities, viz., less odor and clearer light. Before the opening of the Batum wells petroleum was exclusively imported from the United States, and the market was lost through the inactivity of the American producers; but it can be regained, and steps to this end have been taken by the purchase by an American company of a site here for tanks and a factory. This real estate transaction has caused considerable interest here as the company was forced to pay an exorbitant price for the land. A Hungarian company has already purchased a site, but it is now rumored that it is ready to sell it and retire from the contest."

SHORT NOTES FROM VARIOUS LEASES.

Well No. 2 of the Consolidated Midway Oil Company is still rated as good for 2,000 barrels of oil per day. The company is shipping a great deal of oil by tank cars to Los Angeles.

United Oil Company's well No. 9 on section 6, 32-23, Taft, has developed into a large well, but throws so much sand that its exact dimensions cannot be accurately determined as yet.

The Midway Five Oil Company, which is close to the Midway Premier, has announced a dividend payable March 1st, which it is said will be at the rate of from ½ to 1 per cent per share. The company has only one well producing now, but is delivering 1,000 barrels per day at 30c per barrel, and is earning $3,500 per month at that rate above all expenses. The company is running two strings of tools, has doubled its capitalization, has absorbed the Midway Four and is all around in an excellent condition.

Harry E. Sinclair, Charles Ballagh, C. H. Colby, Geo. Sproule, W. H. Cullom, S. H. Martin, and others have formed the Hibernian Oil Company to operate a lease from the Union Oil Company just south of the Standard Oil Company's big well on section 10, 32-23. The lease consists of the forty acres comprising the southeast quarter of the northwest quarter of section 15, 32-23. It is a good property.

The Mays Oil Company is just about ready to finish well No. 2. No. 1, the famous gusher which was at first thought would prove as great a well as the Lakeview, and which was conquered by a strainer, is now flowing 1,000 barrels of light oil daily.

Maricopa "36", 400 feet from the Lakeview, is flowing 400 barrels per day.

Dudley & Martin, who drilled the first well in Lost Hills, have brought in well No. 2 with a nice production.

Canadian Pacific Oil Company of B. C., Ltd., is down 2206 feet on section 4- 32-23, Taft, with 10-inch casing; this will be carried down to 2,600 feet. The company looks for oil at about 3,100 feet in this district, which is deep. The property is surrounded by big producers and the owners are most sanguine.

California Midway's well No. 1, the gusher, is now producing at the rate of 650 barrels per day. No. 2 has recently been bailed and is doing finely. No. 3 is down 2575 feet and No. 4 is 2435 with ten-inch.

It is said that the price of gas will be cut 40 per cent in the town of Taft, in the near future.

The Graham and Loftus property, consisting of 950 acres in the Whittier field, with twenty-four wells producing 35,000 barrels of oil per month, is reported to have given an option to representatives of an eastern syndicate, and $15,000 is said to have been paid down on same; selling price igven as $1,500,000.

PRINCESS OIL COMPANY.

At a depth of 1945 feet well No. 1 of the Princess Oil Company encountered a very heavy gas pressure, last week, and the oil was forced all over the derrick. A heavy head of water was immediately injected into the well in order to allow drilling to be continued. The management of the company is exceedingly sanguine over the prospects at the present time. Well No. 2, on the tunnel tract, east of the Cat Canyon Oil Company, is down 940 feet with a slight showing of oil sands. Company is making nice progress. There is little news from the Summit, Dispatch and Palmer Annex.

United States Geological Survey's Special Advance Report on Oil Production in the United States for 1910

(Prepared by Dr. David T. Day, in charge of Petroleum.)

Note.—We do not give here the entire bulletin, leaving out the report on the Appalachian, Lima-Indiana, Illinois, Mid-Continent, Gulf, Caddo, and other lesser known fields. These are treated in a general way in the first paragraph of the bulletin. Almost all the matter presented was thoroughly covered in the California Derrick's report in the January issue but the bulletin is nevertheless of great interest, and a comparison of our report with it will display few or no differences.)

The year 1910 has been sufficiently eventful in the development of new oil supplies in the United States to more than keep up the country's phenomenal production of the last three years. In fact, the production increased to over 200,000,000 barrels, which is two-thirds of the world's production and several million barrels more than the whole world produced seven years ago.

The most surprising developments of the year were in the Sunset-Midway district of California. The developments in the Caddo field of Louisiana also entirely changed the position of that field. Connected with the developments in both these fields were important changes in the conditions of marketing the oil.

The production of oil in the United States in 1910, as reported by D. T. Day, of the United States Geological Survey, was between 200,000,000 and 208,000,000 barrels, approximately, as follows:

	Barrels.
Illinois	32,000,000
Appalachian and Lima-Indiana fields	32,000,000
Gulf and Caddo fields	14,000,000
Mid-Continent and Rocky Mountain fields	53,000,000
California	73,000,000
	204,000,000

Stocks increased over 50 per cent on the Pacific Coast. Prices of crude oil declined except in the Mid-Continent field, where they increased to 44 cents a barrel.

CALIFORNIA.

The total oil product of California in 1910 was over 73,000,000 barrels.

Sunset-Midway District.

The Santa Fe Company began the year by bringing in a well in the North Midway field which flowed 2000 barrels a day. Soon afterwards the St. Lawrence well, in the adjoining section, proved about as good, although sanding a great deal. On February 7 a well was finished in section 30, township 32 south, range 24 east, which began flowing 800 barrels a day. The flow increased steadily until by the middle of March the well yielded, by measurement, over 9000 barrels a day. Early in March the Mays well was brought in on section 30, township 31 south, range 23 east, in new territory some miles northwest of the previous gusher.

On March 15 the Lakeview Oil Company's well, a controlling interest in which had been turned over to the Union Oil Company, was drilled to 2230 feet and began flowing at a rate estimated at about 10,000 barrels a day. This increased rapidly to about 30,000 barrels. It was impossible at first to control the well, which soon destroyed the derrick and enlarged the size of the hole. Finally the well was surrounded by bags of sand, and the oil was led by pipes and ditches to storage reservoirs, which were soon filled. The flow was surprisingly persistent, and as months went by the oil seemed to clear itself of sand and increased it daily product to over 40,000 barrels. It began to decline in the latter part of the summer, and by the end of the year had fallen to less than 10,000 barrels a day; the proportion of water had increased from less than 1 per cent to about 56 per cent late in December. In this time the well had produced about 5,000,000 barrels of oil that was saved. The oil is of somewhat lighter gravity than the average for the district.

This phenomenal strike was followed promptly by greatly increased activity, although drilling had to be suspended in the immediate vicinity owing to the danger of fire. The region became the focus of oil interest in the United States. The financial effect of this strike was to reduce the price of oil not already contracted for, until 30 cents a barrel was offered; but with rapidly increasing capacity the tendency to keep oil in storage for better prices led to compromises and concessions to the allied producers, especially after the completion of the new independent pipe line to the coast. The Associated Oil Company built an 8-inch pipe line from Sunset to its line at Coalinga, and the Standard Oil Company duplicated its 6-inch line from the Sunset-Midway field to Kern River, connecting with the main line to Point Richmond.

The Pioneer Midway, struck in April in section 30, township 31 south, range 24 east, proved another exceptional find.

The Honolulu Oil Company struck a large gas well to the east of the oil field, in the Buena Vista Hills. The Standard Oil Company also struck a gas well on the western edge of the Buena Vista Hills, in section 10, township 32 south, range 24 east, and the gas proved to have a pressure so great that it could not be confined, although part has been piped away for industrial use under boilers and for lighting in the neighborhood. The flow has been sufficient to justify piping the gas to Bakersfield and other near-by points. These wells have started what promises to be a great gas industry in California.

Coalinga District.

In the Coalinga district development work proceeded most satisfactorily, the oil being found deeper down the dip of the strata, as had been predicted, and the area of the developed field being thus considerably enlarged.

An important addition to the proved oil territory resulted from the discovery of light oil in the Azores and Bohemian wells, on the Jacalitos anticline, several miles south of the nearest producing wells. This area had been classified as oil land in Bulletin 398 of the Geological Survey, and the depth of the oil sand where it approaches nearest to the surface was estimated as 3600 feet. The discovery was made at exactly this depth.

Operations were actively pushed in the Kettleman Hills during the year. As yet no oil has been discovered in these hills, but the geologic conditions are favorable, and a strip 27 miles long and nearly 2 miles wide along their summit is classified as oil land in Bulletin 398 of the Geological Survey.

Vallecitos District.

A region farther north, along the west side of the San Joaquin Valley and over 20 miles from the nearest wells of the Coalinga field, is beginning to attract some attention as a possible future field. During the fall the Geological Survey published a preliminary statement on this region and reported favorably on some areas within it. In at least one of these areas a test well has been started.

Lost Hills.

One of the most important discoveries of the year was in the Lost Hills, where oil was struck in October by the Lakeshore well, the first well ever drilled there at a depth of less than 600 feet. This strike caused a rush of prospectors to the locality and the beginning of operations on a large scale. The Lost Hills had been reported in Bulletins 398 and 406 of the Geological Survey as probably oil bearing, and a large area of public land in them had been withdrawn. The shallowness of the oil was a surprise, however, and tended to indicate that even a larger area would be oil-bearing. Hence further withdrawals of possible oil lands belonging to the public were made.

Santa Maria and Los Angeles.

Developments in the Santa Maria fields were satisfactory, especially to the east in Cat Canyon, where work would have been more extended but for the investment by the local capitalists in the new strikes in the Sunset Midway field.

The development in the Los Angeles pools was uneventful.

Gushers Drilled in 1910.

A list of the principal gushers drilled during the year was printed in the Bulletin, but our readers are thoroughly familiar with the names of all of them and all particulars pertaining to them, so that it would be inadvisable to print the long list.

Laws Affecting Oil Lands.

The meeting of the American Mining Congress in Los Angeles in September brought out much discussion of the policy of the Federal Government as to the withdrawals of oil lands and the proposed policy of leasing the public oil lands. A committee has been sent to Washington to endeavor to have the application of the Yard decision overruled and to seek some fair and prompt adjustment of the petroleum laws. The prospect of success in settling the legislative burdens of the oilmen was increased by careful investigation of the situation on the ground by Frank Pierce, Assistant Secretary of the Interior, and by George Otis Smith, Director of the Geological Survey.

NATURAL GAS IN 1909 AND 1910.

(Report by U. S. Geological Survey.)

The production of natural gas in the United States in 1909, as ascertained by a joint canvass made by the United States Geological Survey and the Bureau of the Census, is estimated by B. Hill, in charge of this work, under the supervision of D. T. Day, to have been $55,000,000, an increase of only about $359,626 over that of 1908. There were no great changes in the industry during the year, the production continuing to decline in Kansas, and an increase being made in Oklahoma and in the Caddo field in Louisiana and in Texas. An interesting feature was the supplying of Fort Worth and Dallas from the gas fields of Clay County, Texas. For the year 1910 the total production is estimated at $57,000,000, an increase of about $2,000,000 over 1909. During 1910 a feature of great interest was the development of what promises to be a very large supply of natural gas in the Buena Vista Hills, Kern County, California, east of the Sunset-McKittrick oil field. Arrangements were made and practically completed during the year for piping this gas to Bakersfield and other towns in San Joaquin Valley.

SANTA MARIA

PALMER OIL COMPANY.

Palmer Oil Company's well No. 1, in the Cat Canyon district of the Santa Maria oil field, is producing regularly at the rate of between 1600 and 1700 barrels of oil per day. The derrick is being replaced upon well No. 2 and the well will be placed upon the pump as soon as this work is completed. The derrick was destroyed by fire recently, at which time the well was flowing between 400 and 500 barrels per day. No. 3 is pumping between 400 and 500 barrels per day, with an increased gas pressure and evidences that it may not remain a pumping proposition but become a gusher as have its famous predecessors, Nos. 1 and 2. Well No. 4 is flowing between 400 and 500 barrels per day, over the casing, with a great gas pressure. No. 5 is in blue shale at 2400 feet. No. 6 is down 758 feet; No. 7 is down 2400 feet and has been recemented. No. 8 is ready to spud in. A sharp drop in the price of stock, followed by an immediate and strong rally, occurred recently, due to internal warfare between interests at outs with the management. The drop has no bearing on the valuation of the properties of the company, which is in excellent shape.

PALMER-UNION OIL COMPANY.

Well No. 1 of this company has reached a depth of 2877 feet and is 60 feet into the oil sands. An excellent well will undoubtedly be secured. No. 2 is 1355 feet deep; No. 3, 400 feet; No. 4 is about ready to spud in. In the Midway field the Palmer-Union has one well pumping 100 barrels per day and two others producing. This company's stock is meeting with a good inquiry on the market.

BROOKS OIL COMPANY.

The pipe line of the Brooks Oil Company is now completed and 7000 barrels of oil has already been delivered through it at the Sisquoc depot, from whence it is shipped by rail to the California Liquid Asphalt Company refinery at Edna, near San Luis Obispo, California. The company is receiving a fraction over fifty cents a barrel for its oil. Their No. 2 well is in a fair way to follow the Palmer producers, it having increased from a producer of 500 to 1000 barrels per day.

HENDERSON OIL COMPANY SOLD.

It is currently rumored, from an excellent private source, that the Henderson Oil Company's property was sold about the 1st inst., to Los Angeles men for a price given as $270,000. Five acres of the tract, however, was sold to the Brooks Oil Company for $4000 an acre.

ASSOCIATED WELL DOING 250 BARRELS.

The Associated Oil Company's well on property adjoining the Palmer, is producing 250 barrels daily. This well was recently reported as being abandoned, by a Bakersfield oil paper. It is in splendid condition and the paper was misinformed.

CAT CANYON OIL COMPANY.

The Cat Canyon Oil Company, which has been followed in this magazine since its organization, is making very satisfactory progress but with nothing unusual at the present time. The company is preparing to put in a ten inch string when they reach 1000 feet.

DOME OIL COMPANY.

Well No. 3 of the Dome Oil Company, in Cat Canyon, is in the great producing stratum of oil sand and it is said that it will prove a big well. In the Midway the Dome has a fine new well producing 22 gravity oil.

VENTURA NOTES

SLOCUM, CANADIAN QUEEN, RAMONA HOME AND COSMOPOLITAN OPERATIONS.

Slocum Brothers at Piru are getting ready to perforate at a depth of 1,100 feet, having what appears to be a small well of light gravity oil. The Canadian Queen Oil Company, in Tapo Canyon, has oil at 1,300 feet depth, but thus far has failed in attempts to shut off the water. The Ramona Home Oil Company, near Piru, in Holser Canyon, are 500 feet down with 12½-inch casing. The Cosmopolitan's well on the Udell lease, brought in around the first of the year, is said to be holding up at 50 barels per day.

OTHER COMPANIES.

The Ventura-California Oil Company has absorbed the Dixie National. The old St. Ives property, located at the head of Sespe Canyon, has ben sold to a party of Eastern capitalists who are bent on developing their newly acquired holdings as much as possible. The Modello Oil Company, operating on the Shields property, south of Fillmore, is now said to be ready to spud in. At Bardsdale the Modello has a well down in the neighborhood of 2,600 feet; nice progress. The Mutual Oil Company, backed and financed by the same interests which control the Cosmopolitan, operating in the Little Sespe, is now down about 2,750 feet. The Pyramid, in Santa Paula, has reached a depth of 2,550 feet with a heavy gas pressure and some oil showings. The Bard Oil and Asphalt Co., in the upper Ojai is 1,200 feet down with well No. 32. Nice progress.

SUNSET-MIDWAY-McKITTRICK

SANTA FE'S TOPPING PLANT CONSTRUCTED.

The announcement made last month to the effect that the Santa Fe would soon erect a topping plant with a daily capacity of 3,000 barrels has been more than justified, as the company has constructed a plant on section 31, 31-23, Midway with a capacity fully 500 barrels in advance of that stated. A test of the plant was recently made and it proved satisfactory in every way. It is said that a good price will be paid for light oils for refining in this plant, but as to this we have no authentic information.

LAKEVIEW GUSHER ON LAST LAP.

While a great many people have lost all interest in the Lakeview gusher it is nevertheless of great interest to others, who have followed its remarkable career from March 15th, last. The wonderful spouter is now just about on its last lap, the amount of oil being constantly on the decrease, while the red mud and water output is the reverse. It is thought that in a very short time the most amazing producer known in oil history will have drowned itself. The Lakeview Oil Company has four wells drilling at the present time on section 34, all within a mile or so distance from No. 1. No. 2 is now 2210 feet down. A big well is looked for as the same sands may be struck which fed the gusher. No. 3 is down 1450 feet; No. 4, 1,000, No. 6, 1250, No. 7, about 530 feet. In a report to President Lyman Stewart, of the Union Oil Company, which owns the controlling interest in the Lakeview Oil Company, W. W. Orcutt, geologist for the Union Oil Company stated the following: "On March 15th, 1910, No. 1 of the Lakeview Oil Company came in a great gusher. Its maximum flow per day was 55,000 barrels. It has flowed continuously ever since, though in diminished quantity. The total volume of its output to date is approximately twice as much as the record of any other single well in the history of the oil industry of the world."

HONOLULU CONS. WELL BIG.

Reports from the well of the Honolulu Consolidated on section 14, 32-24, Buena Vista Hills, are that the 4½-inch string has been put in and that the well has been flowing by heads at the rate of 5,000 barrels a day, making considerable sand. The product is a 26° gravity oil and comes from a depth of 3,200 feet. It goes to the Standard on a contract made several months ago, when the company finished its first well, at a price said to be 65 cents per barrel.

Information concerning the Honolulu's gas wells and plans are given in another column.

SALE OF JANUARY AND JULY OIL COMPANIES.

The Wilkes-Hayden-Kergan Company, who organized a number of successful companies, among them the January and July oil companies, which consolidated some time ago, report the sale of the two companies, but not the price, which has been stated by some publications as $1,000,000, but it is doubtful if there is any authority for making the statement. The sum of $25,000 has been paid over by the English syndicate who are the purchasers, they having agreed to furnish $150,000 for development purposes, taking an option on the stock of the company for a period of two years. In the meantime, the stockholders take a two-thirds interest in the British company, which is to be formed of the two companies' properties and retaining a controlling interest in the British concern until the stock is all taken and paid for. Three leases in Midway (one from the Mt. Diablo) and one in Kern River, are involved in the sale.

ANOTHER PIPE LINE—WHAT?

Pipe line projects have not been a rarity during the last year and so no one is greatly wrought up over the news that the "Guaranty Oil Company" has announced that it will build a pipe line from Midway across the mountains to the deep blue sea. A preliminary survey is being made, according to the reports sent out, so we may expect to hear news of progress made by the company in the early future—maybe. The company has 300 acres of oil land all told, and an option on approximately 1,000 acres more, and is growing. If the company should build a pipe line it could do a good business as a common carrier.

NORTH AMERICAN CONSOLIDATED.

The North American Consolidated has made some great strides during the last year, having brought its production up from 5,000 to 150,000 barrels per month, in the twelve months past. The company's properties are located on the following sections: 16, 22 and 26, 32-23, Midway. The company is now running thirteen strings of tools and is preparing to run eight strings more, on section 16, where a central boiler plant and camp are being constructed.

HART OIL COMPANY CLOSE TO OIL.

The Hart Oil Company's well on section 13 in the Elk Hills is now down 3250 feet and is penetrating a brown shale with a very heavy gas pressure. It is thought that the company will soon get a big well. The Associated has struck oil on section 26, 30-23, and while the production of the well cannot be determined just now for the good reason that the casing parted and a fishing job is necessary, the oil is known to be very light, and consequently valuable.

MIDWAY PREMIER SUBSIDES.

The Midway Premier's gusher, which came in with a roar and a big production several months ago, on section 5, 32-23, is now producing between 1,200 and 1,100 barrels of oil per day; a great drop. This is in line with all the big producers, which soon drop down to a pumping basis, although Midway has furnished a phenomenally long-lived number of gushers whose productions have swelled the general production enormously—witness the Lakeview.

BEAR CREEK OIL GETS ANOTHER.

The Bear Creek Oil Co., on section 14, 31-22, has brought in No. 3, which will make a good producer. The company has four wells producing, its No. 4, recently opened, doing close to 400 bbls. a day.

MIDWAY NORTHERN INSTALLS ELECTRICITY.

The Midway Northern, on the northeast quarter of section 32, 12-23, has installed an electric plant of its own and now has lights by which operations may be conducted at night in safety. The well of this company has been giving trouble by sanding up, but at times, when partially cleaned out, has flowed at a tremendous rate. The Standard Oil Company is laying a pipe line to the company's well having recently contracted for all the company's oil for a period of two years at a price stated to be 45c per barrel. This well, on the northwest quarter of section 32, 12-23, Maricopa, has recently flowed as high as 100 feet above ground and at the rate of 1,000 barrels an hour.

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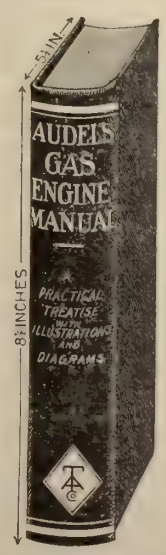

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Following are quotations on stocks listed on the San Francisco Stock Exchange which have met with recent inquiry. Stocks not bid for or which have lain dormant for some time and on which we could secure no quotations, omitted:

Company	Bid.	Asked
Alma	.....	95
Amalgamated Oil	31 50	.....
Amer. Petroleum (pfd.)	.....	95 00
Amer. Petrol. (com.)	59 50	.....
Amy	.....	85
Apollo	.....	10
Associated Oil Stock	47 75	48 00
Bay City	45	.....
Blue Moon	.....	10
Brookshire	1 10	1 15
California Midway	46	47
California Seaboard	.....	25
Caribou	1 30	1 35
Claremont	1 25	1 40
Coalinga Central	55	.....
Coalinga Mohawk	.....	1 00
Coalinga National	18	20
Cons. Midway	12½	13½
Cresceus	30	65
Dabney	.....	10
Del Rey	10	15
De Luxe	1 10	1 50
Dominion	.....	85
Empire	.....	2 00
Enos	40	55
Homestake	.....	.....
Illinois Crude	.....	20
Maricopa National	25	26
Maricopa 36	1 90	.....
Mascot	.....	3 00
McKittrick	15	.....
Monte Cristo	2 32½	2 35
Nevada County	15	.....
Nevada Midway	16	.....
New Pen. Petroleum	50	55
Occidental	15	.....
Pacific States Petroleum	.....	32
Paraffine	80	.....
Palmer	1 37½	1 40
Palmer Union	50	53
Peerless	.....	4 50
Piedmont	.....	10
Pinal	5 00	6 50
Premier	70	71
Republic	.....	43
Rice Ranch	.....	90
S. F. & McKittrick	.....	25 00
Sauer Dough	1 90	1 90
Section 25	30 00	.....
Sesnon	8 00	.....
Shawnut	.....	50
Silver Tip	1 05	1 30
Sovereign	17	20
S. W. & B.	25	30
Sterling	2 00	2 15
Sunset Monarch	50	.....
Superior	.....	15
Thirty-Three	.....	.....
Turner	1 15	1 25
Union	103 37½	.....
United Oil	75	80
Wolverine	40	.....
W. K. Oil Co.	2 62½	.....
Yellowstone	.....	25
Storage Certificates	34	35

LOS ANGELES QUOTATIONS.

(Not Quoted on San Francisco Stock Exchange).

	Bid.	Asked.
American Crude Oil	20	70
Central Oil	1 80	.....
Continental	.....	35
Fullerton Oil	3 25	5 00
Mexican Pet. Ltd. (pfd.)	66 50	68 00
Mexican Pet. Ltd. (com.)	32 77½	32 75
Olinda Land	40	41⅜
Perseus	.....	20
Section Six Oil	18	50
Piru Oil and Land Co.	20	.....
Union Provident	100 50	.....
United Petroleum	102 00	102 00

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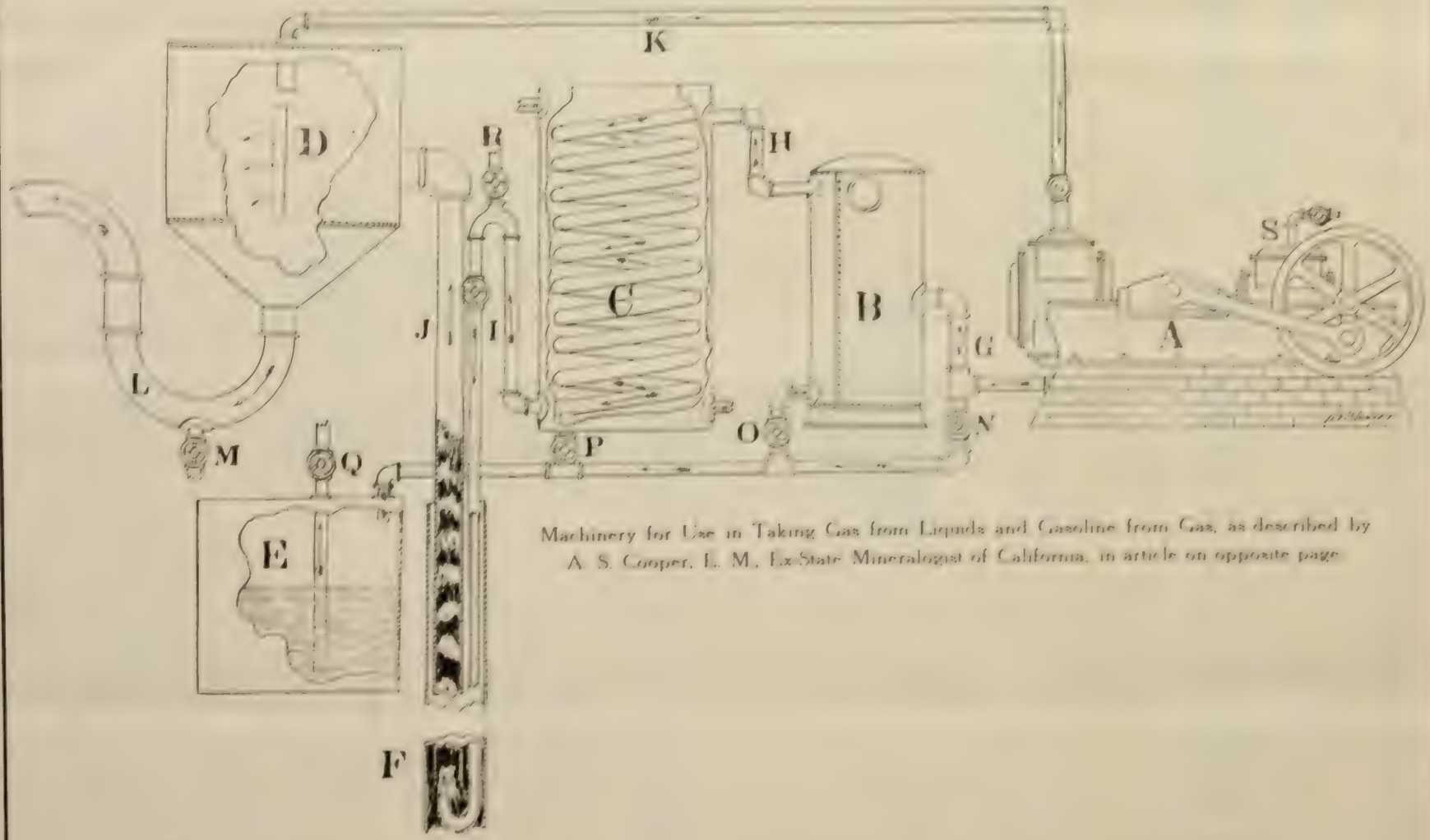

Machinery for Use in Taking Gas from Liquids and Gasoline from Gas, as described by A. S. Cooper, E. M., Ex-State Mineralogist of California, in article on opposite page

CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

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Taking Gas From Liquids and Gasoline From Gas.

(By A. S. Cooper, E. M., Ex-State Mineralogist of California).

(Editor's Note: At the present time this article is peculiarly interesting for the reason that the separation of gasoline from natural gas promises to become a great industry in this State. A careful reading of Mr. Cooper's article can therefore be of great benefit to those interested in the production of natural gas in California. We regard the article as one of the most important which has ever appeared in these pages by Mr. Cooper.)

Taking gas from liquids, and particularly taking gasoline from natural gas is the latest matter of scientific interest in oil and gas circles to attract attention through its remarkable possibilities for creating something of very material value from that from which nothing has heretofore been realized. It is true that in Pennsylvania and elsewhere East there are several plants taking gasoline from gas; but the process is not generally known, and in California is not used at all at the present time, and therefore the description which follows should be of general interest to holders of California oil lands which have proved to be also enormous gas producers when the proper strata have been reached.

The waste of natural gas in this State has been positively criminal and as idle as wicked. It is by no means an exaggeration to say that already more than 1,000,000,000 cubic feet of gas has simply blown away with the winds which fan the hot air across the Buena Vista Hills, in Western Kern County. It is true that the Standard Oil Company has utilized its supply recently, and that other companies either have already done or will do so; but for month upon month gas has been escaping into space with no attempt on the wart of the owners of the property to save it, and this lost gas constitutes a criminal waste—a waste in dollars and cents which it is hard to approximate. At the same time, there have been almost insuperable difficulties in the way of saving in certain cases, as witness the uncontrollableness of the Standard's great "gasser."

The extraction of gasoline from gas is accomplished by use of the machinery shown in the accompanying diagram, made expressly to illustrate this article. Following is a key to the diagram: A is a natural gas compressor, B a receiver, C a condenser, D a separator of oil or water and sand from gas, E a gasoline receiver and monte-jus, and F, the well itself.

The path pursued by the gas is easily described. The compressed gas from the compressor A enters the receiver through the pipe G. From the receiver it passes into the condenser C through the pipe H. From the condenser it is forced down the well F through the pipe I and up the flow-pipe J, lifting oil and gas from the well, F. The oil and gas enter the separator D at a tangent with its circumference, producing a cyclonic or rotary motion which, by its centrifugal force, separates the oil and sand from the gas. The gas flows through the pipe to the compressor while the oil flows through the pipe L to storage and the sand settles at the bottom of the pipe L and is removed through the cock M. Surplus gas is allowed to flow through the cock R to use.

Whence flows the gasoline removed from the gas by compression? An interesting point surely, and one not to be passed over. The answer is shown by following out the movements indicated on the diagram: the gasoline removed by compression is permitted to flow through the cocks N and O, and the gasoline removed by both compression and condensation is permitted to flow to the monte-jus through the cock P. When the cock Q is opened the pressure of the gas on the surface of the gasoline in the monte-jus forces it to the place of storage.

By passing gas or air over the surface or through a volatile hydro-carbon such as the lighter descriptions of petroleum oil known as gasoline, the volatile hydrocarbons are vaporized and are taken into solution by the air or gas. This method is employed in gasoline engines, carbureting air and enriching gas so as to increase its illuminating qualities.

Crude petroleum oil is composed of a number of hydrocarbons and hydrocarbon compounds mutually dissolved one within the other. When air or gas is passed over or through crude oil fractional evaporation occurs and the air or gas becomes charged with the volatile parts of the oil. After being treated with air or gas for some time a residue of insufficiently volatile oil remains.

This leads to the fact that when accumulations of petroleum

oil having gas in solution under pressure are opened by a drill hole, the pressure on the oil is decreased and natural gas is liberated throughout a large volume of the oil. This gas, upon being liberated, takes in solution volatile hydrocarbons such as gasoline. When the pressure is further removed by a gas lift the volume of gas with gasoline in solution is largely augmented. The same operation takes place in Nature when gas is liberated by decrease of pressure from the water underlying the oil and passes through the oil. The gas forced down the well by a compresser when ascending through the flow pipe G as shown in the diagram is intimately mixed with the crude oil and the volatile parts of the crude oil are vaporized and taken into solution by the gas.

Gasoline taken from natural gas by compression and cooling may contain impurities which may in their turn be removed by fractional distillation; but it is also possible that most of them may be removed while the gasoline is in a vaporous form, thus dispensing with fractional distillation. In natural gas with gasoline in solution coming from an oil well more or less petroleum oil is held in suspension by the gas, that is to say, distributed through the gas in minute drops, and since the quantity of oil held in such suspension is sufficient to contaminate and darken the gasoline it must be gotten rid of, which can be accomplished by subjecting the gas vapors and oil to centrifugal action whereby the particles of oil which are mechanically held by the vapors and gas are thrown from the same. Another method of removal of these minute oil drops held in suspension with the gas and vapor is by means of a "scrubber." A scrubber consists of a tower thirty feet in height filled with coke. The gas passes into the tower at its base and in its ascent through the coke meets a shower of water which removes the oil. Minute drops of water left in gas or vapor are not injurious as they will settle out of the gasoline after its removal from the gas.

The particles of oil can also be rubbed out by passing the gas vapors with said particles in suspension through an assemblage of baffle plates or by filtration through various substances.

By a sufficient increase of pressure (produced by the compressor shown in the diagram) combined with a minution of temperature gasoline vapors held in solution in natural gas may be reduced to a liquid state. In the compression process the gas with gasoline in it is compressed to from 100-120 lbs. per square inch, is forced through three tubular condensers (the diagram merely indicates one condenser) the first two of which are cooled by water or oil while the third is cooled to from 40 to 50 degrees below zero (F) by a refrigeration machine.

If the natural supply of water used in cooling the condensers and compressors is insufficient, storage reservoirs of ample size from which the water is used over and over again are provided. The oil coming from the well can also be used for this purpose.

After leaving the condensers the gas from which the gasoline has been removed may be employed in cooling the compressors and advantageously heated to a high temperature as the higher the temperature of a gas under existing conditions, the greater the amount of light hydrocarbons it is capable of carrying. Heating the gas also increases its volume. A plant for the separation of gasoline from gas should be placed as near the wells as practicable, as oil frequently exposed to the air will soon lose its volatile parts.

Approximately 5,000,000 barels of crude oil, or more than that amount are brought monthly to the surface in California. Three per cent of this is in the form of gasoline and other light hydro-carbons which are carelessly or wantonly wasted. This gasoline, if saved, would be worth one million dollars monthly—but thus far it has found nobody to take the matter up on a large scale, or even on a small scale, and the appalling waste continues.

PRODUCTION FOR JANUARY, 1911, IN DETAIL.

Following is our regular detailed monthly statement, giving field, wells producing, total production, consumption and stocks during and at the end of January, 1911:

Field	Total wells Producing,	Total production for month.
Kern River	7586	1,217,835
McKittrick	175	499,580
Midway	339	1,324,073
Sunset	143	418,066
Coalinga	749	1,645,180
Watsonville	3	2,170
Arroyo Grande		3,200
Lompoc	18	69,400
Santa Maria	146	541,450
Summerland	134	5,550
Santa Paula	259	42,999
Newhall	77	13,701
Salt Lake	263	253,376
Los Angeles	416	36,410
Whittier-Coyote	140	93,921
Puente	55	3,100
Fulerton-Brea Canon	238	396,169
Total	4746	6,566,180
		Barrels.
Stocks, December 31, 1910		30,852,863
Production, January, 1911		6,566,180
		37,419,043
Consumption, January, 1911		5,577,946
Stocks, January 31, 1911		31,841,097
Average daily production		211,812
Average daily consumption		179,934
Average daily surplus		31,878

It is said that a great number of wells have been shut down recently, because of the heavy rains, the cold weather, and breaking and plugging of transportation lines. For this reason a drop in production is being generally looked for in February and March.

FIELD OPERATIONS DURING JANUARY, 1911, IN DETAIL.

Following are the field operations during January, as given out by the report of the Standard Oil Company:

Field	Rigs Comp.	Wells Drg.	Wells Comp.	Wells Abd.
Kern River	8	32	17	...
McKittrick		23		...
Midway	30	214	27	4
Sunset	9	44	7	1
Coalinga	12	154	12	3
Watsonville		2	...	....
Arroyo Grande		2	..	..
Lompoo	1	7	.	.
Santa Maria	..	36	2	.
Summerland		2		.
Santa Paula	4	35	. .	.
Newhall		3	.	1
Salt Lake		15		

Whittier-Coyote	....	19	....	....
Puente	....	1	....	....
Fullerton-Brea Canon	....	45	....	....
Repetto	....	1	....	....
Total	64	635	65	9

Two million eight hundred and thirty-three thousand barrels of oil is said to be the production of Kern county during February. Detailed reports not out yet.

BOTH HOUSES PASS AND PRESIDENT SIGNS THE SMITH REMEDIAL BILL.

As was anticipated when the news became known that the Smith remedial oil land bill had passed the House, the Senate passed the measure, February 25th, and the President signed it March 2nd. It is now a full-fledged law. The direct effect of the new law is that the Government shall not reject locations because of the assignment of the rights of locators, refusing patent thereto; and it is estimated that the law will validate claims aggregating approximately 51,800 acres. It is believed by Mr. J. M. Dunn, one of the oil men's committee, that all claims upon which work was actually done before the withdrawals of July 3, 1910, will be allowed; if not by the Land Office, then by the courts. The law was published in the last issue of this magazine.

In spite of the sneers which were spread broadcast through papers not favoring the passage of the measure, against the workers for and supporters of same, it passed muster before the House; after which its passage and signing was conceded. The work was a worthy one and much credit is due the *Oil World*, of Bakersfield. Most of the credit, however, is due to the oil men's committee; to George Otis Smith, of the U. S. Geological Survey; to Assistant Secretary of the Interior, Franklin S. Pierce; Congressmen Smith, Needham and Mondell; and Senators Flint and Smoot. The President, too, favored the bill. The big interests likewise favored it; only the Conservationists were left out in the rain, metaphorically speaking. The "Yard Decision" is now a thing of the past, at least as far as regards oil lands; and the part of the industry which was effected (not so great a part, but still, to be reckoned) can now go on its way unridden by the fear of total loss of ownership of a piece of property which was operated upon in good faith. It is only fair to say for ourselves that, in giving a review of the Yard Decision a number of months back the *California Derrick* credited the Government with a desire to do everything possible for those who needed relief from the Departmental ruling.

WITHDRAWALS AND RESTORATIONS OF OIL LANDS IN CALIFORNIA.

By order of ex-Secretary of the Interior Ballinger, 37,975 acres of probable petroleum bearing lands were withdrawn from public entry on February 25th last. The total outstanding petroleum land withdrawals at present aggregate 1,594,332 acres, in California alone.

The restoration orders signed by President Taft recently, have gone into effect. The first order was signed February 18th and returns for entry lands north and east of the Coalinga field, in Fresno county. The territory is opened to settlement on April 9th, and to entry on May 19th. Restoration is made for the reason that the land has been determined non-petroleum bearing; it has little value for anything else than that. The restored lands are located in township 13, ranges 11 and 12; township 14, range 12; township 15, range 12; township 16, range 13; township 17, range 13; township 18, ranges 13, 14, 15 and 16; township 17, range 14; township 17, range 14.

Lands which again became subject to settlement under the general homestead law on March 4, 1911, but not subject to filing until April 3, 1911, which were restored by the President recently, are located in the following townships and ranges, Mt. Diablo Meridian: Township 21 S., R. 15 E.; township 22 S., R. 15 E.; township 21 S., R. 16 E.; township 22 S., R. 16 E.; township 23 S., R. 16 E.; township 22 S., R. 17 E.; township 23 S., R. 17 E.; township 23 S., R. 18 E.; township 24 S., R. 18 E.; all of which are likewise restored because non-petroleum bearing.

STANDARD OIL MOVES HEADQUARTERS.

Standard Oil headquarters are to be changed in the near future from the Sheldon building, 461 Market street, San Francisco, to the new Brower building, corner Nineteenth and I streets, Bakersfield. The move will take place as soon as convenient after the new building is ready to receive the company. Bakersfield, the natural hub of the California oil business, is the logical place for headquarters for a company of magnitude, especially for a company which has most of its holdings in the California fields in Kern county.

F. H. Hillman, recently sent to California from the East, as general manager of the producing department, will inaugurate a new era in the Standard's producing department, it being understood that his especial business is to bring up the production. All land and oil contracts will from now on be made at Bakersfield. The company will undoubtedly save a great deal of money in telegrams, railroad fares, and expenses incident to traveling, as well as much precious time, and much energy, when the move had been made. It is thought that in taking the office from San Francisco the company will also take away such business as is transacted here. In case the company builds a refinery in or near Los Angeles, headquarters in Bakersfield are doubly convenient.

ASSOCIATED PIPE LINE BREAKS—OTHER PIPE LINE MATTERS.

The Associated pipe line running from Coalinga to Monterey broke during the latter part of last month at the point of crossing Wartham Creek, and great difficulty has been experienced in trying to repair it. The line runs here about eight feet under the creek when the latter is in the swollen condition due to winter rains. The other big carriers have been experiencing trouble also. The Producers' Transportation Company has shipped only contract oil, due to the fact that the ground has ben cold and has made running the oil a difficult and slow matter. At one time recently the oil could only be forced at the rate of seventy barrels per hour with an 800-pound pressure. Hot water had to be pumped through the line for hours at a time and fires made at regular intervals along same, between stations.

Fix Tax Valuations.

Assessors of nine counties met recently in Fresno for the purpose of establishing a general rate on oil pipe lines, pipe line stations, and other real property. The principal assessments decided upon were of course the pipe line rates; and representatives of the Standard, the Associated and Producers' pipe lines companies were at the meeting for the purpose of aiding in the matter. The rate upon which the companies will be assessed was determined at $3300 for pipe lines and $45,000 for pipe line stations, for the Standard and Producers' properties; same applies to the Associated except in the case of its rifled line, upon which the rate will be determined at a $3500 per mile valuation, and its stations north of Mendota, which

are larger than the others. A great deal of talk is being made about the new

Proposed Pipe Line to Los Angeles.

The Southern California Oil Consumers' Association has come out with a proposal to build a line direct from Los Angeles to the San Joaquin Valley oil fields, with the idea in view of making Los Angeles the foremost oil shipping center in the world. The high rate of freight has forced the Association to this move; 42c per barrel is the railroad charge for shipment from the West Side fields. The distance from Monarch, the shipping station mentioned most prominently, to Los Angeles, by rail, is 232 miles; as the crow flies it is but 96 miles. From Monarch to San Francisco as the crow flies is easily 250 miles. Why, say the Los Angeles merchants (and with reason), should San Francisco have all the pipe lines and facilities when it is so very much farther removed? They propose to change matters by a new pipe line to cost $2,000,000 or more; undoubtedly more. If anything is actually started, and the Association really gets the pipe line, the status of Los Angeles as a manufacturing site will be entirely changed; it will undoubtedly have the foremost manufacturing facilities on the Pacific Coast; cheap fuel, cheap labor, infinite space, excellent climate—all around, the ideal location for a great manufacturing center.

NEW OPERATIONS BY UNION.

The Union Oil Company has commenced operations on a tract of land in the Whittier field lying directly east of the Murphy Oil Company holdings, which it has owned for several years, but on which no drilling has yet been done. The company is building two rigs and will begin drilling as soon as they are completed. The Murphy Oil Company recently brought in a good well near the Union's line, which has forced the latter company to protect its property. The oil found here is high gravity and good for refining purposes.

The Union is also going to prospect for oil on the McKittrick front, having entered into an agreement with the Barnsdall interests to drill a test well on section 10-29-21, about ten miles northwest of McKittrick, where both concerns have immense holdings of wildcat stuff. A rig is now going up and drilling will be commenced immediately. One mile east of this location W. G. Van Slyke & Co. are getting ready to test a tract of land owned by them.

CHECKS DUE.

Checks for many thousands of dollars are due the members of the Indeepndent Agency and it is understood will be mailed March 20th.

ANNOUNCEMENT.

We are pleased to announce to California oil men that Mr. Harold H. Clark has been appointed California agent for the Wm. Graver Tank Works, of East Chicago, Indiana, and is prepared to furnish quotations on everything in the line of steel tanks and plate work. Mr. Clark's office is No. 312 Security Bldg., Los Angeles, California.

RECENT PATENTS.

Thefollowing recently granted patents of interest to the oil trade are reported expressly for The California Derrick by J. M. Nesbit, Patent Attorney, Park Building, Pittsburg, Pa., from whom printed copies may be procured for 15 cents each:

Oil saver, C. F. Rigby, Butler, Pa., 983,314.

Rod puller, David Covey, Wichita, Kans., 983,809.

Governing valve for gas engines W. O. Platt, Oil City, Pa., assignor to Joseph Reid Gas Engine Co., same place, 984,023.

Valve opening device, G. A. Farrah, Spencer, W. Va., 984,-084.

Well drilling machine, Senshiro Morimura, Tokyo, Japan, 984,287.

Pump, Rudolph Conrader, Erie, Pa., 984,351.

Drill jar, Senshiro Morimura, Tokyo, Japan, 984,386.

Casing, J. S. Stewart, Houston, Texas, 984,449.

Well bucket, C. B. Fleet, Quinlan, Texas, 984,656.

Casing perforator, A. E. Raine, Bakersfield, Cal., 984,702.

Pump rod lifter, Leonard Johnson, Blue River, Wis., 984,764.

Drilling appliances, (4), A. C. Ludlum, New York, assignor to New York Engineering Co., 984,825 to 984,829, inclusive.

Oil well pump, M. J. Morton, Los Angeles, Cal., 985,052.

A POOR POLICY.

Pennsylvania oil publications are after the promoter hard and fast; particularly after the California oil promoter. As a matter of fact there were a considerable number of so-called "fake" promotions during the boom times of last year, many and many a company being formed for the exclusive purpose of benefitting the promoter. But all the incorporations were by no means for this purpose, and continual knocking is bound to harm us. What with the policy pursued by a certain small Los Angeles publication, and by the *Oil City Derrick*, and any number of California newspapers, the values of our proven excellent stocks have sunk way down on the exchange without any reason at all. It is a shame that this knocking should go on as the small owner of good stocks almost invariably sells out at a time like the present, losing to the big operator; and the newspapers and magazines which induce him to do so, through wrong and depressing reports, are directly in collusion with those who desire his stocks, and are responsible for his losses. We do not advocate "boosting" irresponsibly; but general "knocking" is as inexcusable as it is wrong. It ought to be stopped.

MAY PORTEND RECOVERY SUIT.

Both governmental and S. P. employees are engaged in checking up the records of entry upon property now claimed or held by the Southern Pacific Company, in the Recorder's office at Bakersfield. The company, it is understood, is endeavoring to straighten out all its claims to the various properties, valued at many millions of dollars, while contemplated action against it is said to be the reason for the government's investigation.

VENTURA OIL DEVELOPMENT COMPANY.

The testing of well No. 3 has been somewhat delayed on account of the very heavy rains and because of the fact that it was necessary to put down two or three more joints of the 10-inch casing to thoroughly shut off the water. However, the showing of oil is excellent and the management feels certain that a good well will be completed. The oil coming up seems to be of the light gravity characteristic of that portion of the field. Shipments from the Newhall property (formerly owned by the Clampitts) have been delayed because of the heavy condition of the roads, due to the heavy rains, necessitating the storing of a large amount of oil. It is anticipated that the road will be in shape again in the course of a few days and shipments will be pushed vigorously. W. C. Daniels is the manager of this company; he is known for results.

California Crude Oil as Fuel for Gas Engines. Use of Electricity in California Oilfields

By A. H. Rigdon, in February number of the *Pacific Miner*.

USE OF ELECTRICITY IN THE CALIFORNIA OIL FIELDS.

The use of electricity as power in the oil fields is becoming more and more popular as the many advantages which are derived from it become known to the oil operator. Discussion of the various benefits which accrue to the users of the electric motor for pumping is becoming a general matter in the leading electrical magazines and in oil circles, and we read with most agreeably surprised interest in a recent issue of the *Journal of Electricity, Power and Gas* to what extent the motor is being used in the oil fields. In introducing articles bearing upon the subject the *Journal* stated:

"Recent extensions of transmission lines have placed electric power within reach of many oil fields, mines and towns formerly isolated from this advantage. Electrical manufactures have made a close study of the problems to be put and have developed special types of apparatus to successfully perform the required duties. Electric power is shown to be more economical and more convenient and is consequently gradually displacing its competitors."

Several papers are then given in the *Journal* which were read in the February discussion of the San Francisco Section of the American Institute of Electrical Engineers. We have secured permission from the editor of the *Journal of Electricity* to present the papers or such parts of them as seem especially interesting to the oil men in this paper and give them herewith.

Mr. W. F. Lamme, in an article entitled "The Electric Motor in Oil Well Service," opened his paper by saying that in certain Eastern oil fields the electric motor has been in use for several years but in California only recently have serious efforts been made to electrically operate oil wells. Since the problem of electric operation involves a wide distribution over much territory, the distributing system must be alternating current, and the induction motor is the only available type fitting the case. Following is Mr. Lamme's paper, giving the advantages of the use of electricity and bringing up very material points in its favor, describing the aparatus in detail:

By the use of alternating current, at say, 11,000 volts, three-phase, the distribution losses are reduced to a minimum, whereas the old method of steam distribution is very wasteful, even with the care taken to cover the steam pipes with heat confining covers and to bury the pipes in the ground.

But before electric drive can be adopted in the oil fields an ample supply of electricity must be available to the user and it must be offered at a reasonable rate. During the past year the San Joaquin Light & Power Company have constructed distributing lines through the oil fields at Coalinga, distributing at 11,000 volts four wire star, using 6600 volt distributing transformers, and have placed electric power at the door of the operator, offering it at a reasonable rate.

This makes a condition where the operator has now only to convince himself that the work can be done with the electric motor at a cost that will pay him to make the change from steam to electricity.

In passing, let me say that some oil properties furnish enough gas to run gas engines to do all their pumping. Where a gas engine requires considerable attention, and some repairs, and while the first cost is large, yet this form of power in the oil fields, where available, is cheap. We have not yet secured enough data to warrant a statement that the electric power is chaper on the average than gas power, but comparing with steam power, the data is certainly against the steam.

In order that we all may understand the kind of work required of the electric motor, let us divide it into the four classes of pumping, cleaning and drilling the well, and moving the oil.

Pumping.

An oil well consists first of an outer pipe ranging in size from 16 to 6 in. called the casing, which is put in while the well is being drilled. Inside this casing is placed a second string of pipe ranging in diameter from 2 to 3 in., called the tubing, which forms the walls or stock of the pump. Inside the tubing is a series of rods screwed together, to the lower end of which is attached a sucker with a ball valve, to catch and raise the oil in the tubing.

As there is only one rod and lift the load is fluctuating, particularly in the case of a dep well. There is no objection to this fluctuating load except that it increases the copper losses in the motor, thus lessening the possible output. Since copper losses increase in oil well work, a motor will small copper losses is best.

When pumping by steam the engine is run direct upon the throttle without a governor, and so the fluctuation in the stroke is much greater than with the motor (unless the motor is run with much resistance in its secondary circuit). Some oil operators claim this is a good thing, for they say it lessens the strain on the pump rod, and so lessens breaks in this rod. However, this view is not being supported in practice, the motor and gas engine, both of which give a more uniform stroke, do not produce any more broken rods, and to date there have been less breaks. Undoubtedly the more regular movement raises more oil, and this is an argument in favor of a more uniform drive.

The number of strokes per minute in pumping an oil well varies between 16 and 26, depending upon the kind of oil, whether heavy or light, the length of the stroke, the strength of the rods and the tendency to sand.

Cleaning.

The sanding or clogging of a well explains the necessity of cleaning it. Oil is found in loose beds of sand in the earth, and this sand and oil are frequently under considerable pressure, especially when a well is new. The sand is inclined to clog the lower end of the pump stock, and frequently it so stops the flow of the oil into the pump, as to necessitate cleaning away the sand. This is done by raising all the pump rods and tubes (in sections of about 60 feet each) and then introducing a bailer to remove the clogging sand. The bailer is a piece of pipe closed at the lower end by a ball valve, having a projection to open the valve when bailer strikes the bottom. Sometimes this sand gets so tight that a drilling tool must be lowered to cut through the sand to the oil producing strata.

After the objectionable sand is removed, the tubes and rods are replaced, and the well is again ready to be pumped. A motor for well pumping should have good performance for continuous service and as little loss as is consistent with good design and low maintenance. For cleaning it is important to have a heavy pulling motor, and efficiency is of little moment, for the process of cleaning takes only a few hours per well. These two features of good performance and heavy pull, are

at present combined in one motor, by the use of a three pole, double throw switch, throwing the stator windings in star for pumping, and in delta for claning, the delta connection giving approximately three times the pull that the star connection gives.

In cleaning, higher speeds are required than in pumping, these higher speeds being secured by changing pulleys to give from 1½ to 2½ times pumping speed, depending upon the size of the motor and the nature of the work. The smaller the pulley, the longer the time required to clean a well, and the smaller need be the motor. This question of speed and time for cleaning is still a disputed point, that is, how large should the motor for cleaning be compared to pumping requirements.

This combination of a cleaning and pumping motor in one, has not given the best results for either service, as a cleaning requires a rugged motor with resistance and a controller large enough to do the heavy work, which is a handicap in pumping, and makes the equipment expensive, while the motor for cleaning is light for the work. But as it stands, the equipment is well fitted to a condition where cleaning is done infrequently, say once in two weeks or a month.

In oil well work to clean the well is at present found to be necessary. But attempts are being made to introduce screens into the well, which it is claimed will keep back the sand and so prevent sanding. Should this plan prove a success then the cleaning feature will become a secondary matter, and the pumping equipment can then be greatly cheapened.

Cleaning.

In the process of drilling an oil well, a cutting and hammering tool of considerable weight is drawn up and dropped much as in a pile driver, except that with the drilling outfit the tool is at the end of a line which springs, the action being something like that of a weight at the end of a spiral spring. If you take hold of the other end of the spiral with the weight downward, and move it up and down, striking the ground with the weight, the heaviest blow will be made at a certain speed, the downward fall of the weight must not be retarded by the spring, and the spring must catch up the weight as soon as the weight has struck the blow, otherwise an improper reaction takes place and time will be lost.

The condition illustrated by the spring and weight is the one sought in drilling an oil well, and so the motion given by the engine or motor must vary to accomplish this effect. At first thought the condition named may seem easy. But when we consider the weight of a long steel rope, which is the spring, it is noted the condition is continually changing, which together with the different kinds of ground drilled, makes quite a problem, for it is always the aim to maintain a maximum rate of digging.

In the process of drilling, water is introduced into the hole, which aids the cutting and facilitates the removal of the waste. After a certain amount of drilling is done, the drilling tool is drawn up, and the bailer is lowered into the hole, filled, brought to the top, emptied, then lowered several times until the hole is clean and ready for the drilling tool again.

In this process of bailing, high speeds are essential, especially where the well is deep, otherwise much time will be lost. In the case of pumping, time can be given to change pulleys, but in the case of drilling, this is not permitted, so the motor has to furnish the faster speed.

Mr. Clark, engineer for the South Penn oil fields of West Virginia, made a design of motor for that field, as follows: The motor has two stators on a single base, one stator stationary, the other arranged to be moved about the shaft by means of a worm gear.

The rotor is in two parts, solid on one shaft, and with one winding extending through both parts, it is wound squirrel cage with a short-circuiting ring at each outer end. Both parts are arranged to give double speed.

The worm gear adjustment gives nice ranges of speed for drilling, and the double speed feature is used where high speed is needed, as in bailing. This motor has also the star delta arrangement, so enormous pulls may be exerted when necessary, such as when the tool sticks or a string of casing becomes tight in the well. Excellent results are reported in its use.

In oil well drilling experiments are being made with a circulating pump, or circulator, which forces water down the casing, and this water raises the waste on the outside of the casing. This may be so perfected that bailing will no longer be needed, and so the high speed feature on the drilling motor may be eliminated. This will simplify the motor and make it less costly.

The rotary drilling rig is coming into use, and is easy to drive by the use of a motor, for no special speed or different feature from the standard motor will be necessary, and it is possible constant speed will be all that is required. If so, then the drilling problem, so far as the motor is concerned, will be easy. The rotary drill is simply a turning tool which bores itself through the ground.

Moving the Oil.

To complete the circle, and do away with steam drive entirely, there should be some additional means of moving the oil from the sump to the storage or the pipe line. Part of the movement is now done with a tail pump or a plunger pump, on the opposite end of the beam from the oil pump. This does well, except in the case of reservoirs or sumps beyond the reach of the tail pump. At present such wells use a sump pump or separate reciprocating steam pump, but to operate this a steam line has to be run, and there is considerable expense in its installation. Some sort of simple high speed rotary pump devised to pump oil against a head of about 100 pounds per square inch, should prove an acceptable substitute.

This work of moving the oil by electric drive has not yet been taken up, and in doing so, the engineer must not forget that a little rise in temperature, a little heat in the oil, greatly facilitates its movement, hence the apparent necessity of retaining steam drive for sump pumping.

But this small quantity of heat can be supplied by electric coils, or by a small portable boiler set beside the reservoir and using but a few gallons of oil per day.

In summarizing it is seen that considerable progress has already been made in adopting the electric motor to oil well work, though an oil well pump, so far as power is concerned, is an inefficient affair. The electric motor is a high speed machine, the well pump a slow speed machine, and the link between the motor and the pump is not efficient, frequently half the energy applied being wasted before the pump is reached. To date the application of the motor is made in one of two ways:

1st. The belt and counter shaft plan, in which the motor is belted to a counter-shaft and the counter-shaft to the main drive, a large wooden wheel suported on two wooden posts which operates a walking beam, which in turn operates the pump.

2d. The motor itself has a counter-shaft, which counter-shaft is driven by gear and pinion, and in turn is belted to the main drive as in the first instance.

In both instances a counter shaft is necessary, as well as gears in one instance, also the walking beam and main drive are far from an efficient means of reaching the pump. Tests have shown that some pump rigs waste as much as 50 cents of current per day, to make up the loss between motor and pump, that is $15 per month, where it looks as if $5 should

cover the loss. There is great need for a more direct means of getting from the motor to the well, and at the same time permit the use of a higher speed, therefore a more efficient motor.

There is now in process of construction for the Holton Power Company at El Centro, California, a gas engine-driven generating plant which it is believed will greatly affect the means employed for producing power in those sections of the country where fuel oils are available and where water cannot be obtained in sufficient quantity for use in steam plants. The only satisfactory method of using this kind of oil, successfully, devised up to the present time, has been the burning of it under boilers in which steam is generated for use in some type of prime mover. Within the past few years extensive experiments have been made on gas producers using this crude oil as fuel, and these have now been worked out successfully, as is attested in their use by the government. The installation under construction will contain three Ensign Amet oil gas producers and an Allis-Chalmers 1000 H. P. twin tandem gas engine direct connected to an alternating current generator. With this installation power can be produced with a very great saving over present methods, more than doubling the efficiency that can be obtained by using the oil under steam boilers.

To give some idea of the complete installation a brief description of the apparatus will be given. Oil will be stored in a concrete tank from which it will be piped to the producers. In the producer a small amount of the oil is burned while the rest is vaporized and broken up into a fixed power gas suitable for use in the gas engine. The gas, as it leaves the producer is exceptionally clean, having been scrubbed and freed of all impurities. It is, therefore, ready for immediate use in the engine or it can be stored indefinitely in the holder, ready for future use in case the plant serves as an emergency unit. From the producer the gas goes to the engine.

The gas engine is of the twin tandem type with cylinders 21 in. by 30 in. It is provided with an air starting device of sufficient capacity to put the engine into active service almost instantly. Cylinders, exhaust valves, pistons, piston rods, and all parts coming in contact with the hot gases of explosion are water cooled. The inlet valves are of the stratification type, which allows the separate control of both the gas and air, thus the mixture can be properly proportioned to meet the load. These valves are automatically operated and controlled by a centrifugal governor, belt driven, from the main shaft. The engine is direct connected to an Allis-Chalmers 3-phase, 60-cycle, 2400-volt, 150-R. P. M. alternator. Very close electrical regulation is provided by a 15-foot flywheel weighing approximately 40,000 pounds.

This is among the first gas-engine installations of any size on the Pacific Coast and this step forward in the production of power will mean much for the future development of all sections of the country where cheap fuel oils are available. Operating with a much higher efficiency than can be secured when the oil is used as fuel under a boiler, it will mean a great saving in the first cost of fuel. In addition to this very important point, there will be a great saving in the supply of water necessary. This is of prime importance in those sections where water is one of the most valued requisites. The only water needed for this installation is that used in the producer for washing and that used in cooling the engine. While the amount used for cooling the engine is comparatively large, it can be used over and over again, as the only loss is through evaporation in the cooling tower. The initial temperature of the cooling water is very high, being 95 degrees, while it will leave the engine at approximately 145 degrees. In order to save this water for further use, a cooling tower will be built which will reduce the temperature to normal.

WATER IN OIL FIELDS.

Mr. R. P. McLaughlin has written a letter, or an article in the *Mining and Scientific Press* in regard to legislation concerning the compulsory shutting off of water in oil wells. The letter was written in answer to another letter, from Mr. W. F. Chandler, a member of the present California Legislature who had asked suggestions from oil men as to the kind of legislation desired to secure best results in compelling companies to shut off the water. Mr. McLaughlin says that it is a self-evident fact that all oil operators desire to shut off the water as they are in the business not to produce water but to produce oil; that for this reason advisory methods are more likely to be valuable than compulsory methods; that the water-bearing formations are under the surface of the ground and cannot be seen, but that if a good log is kept it will greatly facilitate action on the part of operators who are trying to shut off the water in wells on nearby property, because they can then tell when to expect the water. Mr. McLaughlin takes occasion to say that the necessity of finding out where the water is is self evident, since it cannot be shut off without this knowledge. In other words, Mr. McLaughlin proposes that companies make their logs public instead of private, under certain conditions for the general good. But, de does not propose that the wild-catter, who has been successful after extra hazard, should be compelled to show his log until, say, six months after discovery has been made and discoverer has had time to realize benefit thereof. The offices of County Recorder and State Mineralogist are suggested as suitable places to file logs. Mr. McLaughlin concludes his letter as follows:

"The county water commissioner should be required to see that the record was being made in a manner that would afford the desired information. A penalty should be attached so that the commissioner would not, as at present, be powerless to enforce the keeping and filing of record. The law should also contain a provision requiring that all the logs of wells drilled in the past be recorded, as far as possible; that is, all logs that are at present in possession of the owners of wells. A penalty should also be attached to non-compliance with this clause. The requirement that logs be kept by means of daily drilling reports would not be likely to meet with opposition, as most of the operators already follow this plan in some form or other, and a little systematizing would be the only innovation. The points absolutely necessary in a useful log are as follows: (1) Name of property; (2) number of well; (3) location in section, township, and range; (4) depth to, and thickness of, each and every formation (especially noting oil, water, and tar); (5) depth at which each string of casing is landed or cut off (with note as to whether or not it was cemented, and, if so, how much cement was used and in what manner it was put in); (6) description of all tests made to see if hole was free from water; (7) depths between which each string of casing is perforated; (8) names of drillers and tool-dressers. There are probably other points necessary to legislate intelligently upon the matter, and many operators are in a position to suggest them. The matter should receive immediate attention."

JEWELL OIL COMPANY.

The Jewell Oil Company, which leases near the Merchants & Bankers, in the Kern River field, made several shipments in February, although same were not as large as those in January or December last, owing to some trouble met with in several of the wells which necessitated their cleaning out. It is reported that since the wells have been cleaned out a much better production has been secured and the company looks for a continuation of good shipments during March.

Petroleum News from Near and Far

State Mineralogist Aubury's suit against the Haiwee Pacific Oil Company and especially against Dr. C. Howard Merritt, the main factor in its financing and success, is now on trial in San Francisco. The Haiwee Pacific Company is operating on ground which it is claimed it does not own, and which a great corporation is known to desire.

Again the State Mineralogist! He is now making a big fight to save money for the country and at the same time promote the prosperity of the oil producer by having California fuel oil used by the United States naval vessels; and in the transport service. He has the hearty support of the oil men, in this.

The locomotives on the Cascade division of the Great Northern Railroad are now undergoing the change from coal-burners to petroleum burners, according to a news dispatch. We trust the dispatch is correct; and that many like it will follow. Economy is the watchword of the day, in fuel consuming circles.

Twenty-five millions of barrels of oil are annually consumed by the merchant marine of the Pacific; five millions are used by the city of Los Angeles alone; continental railroad systems are taking up the matter of changing from coal to oil burners; the United States is thought to be on the verge of adopting oil as fuel to the exclusion of coal; and still they talk about "that surplus." The opening of the Panama canal and the adoption of oil fuel by the great Atlantic liners seems to entirely escape the eye of some of our "esteemed contemporaries."

An oil refining and pipe line company has asked a franchise from the town council of Casper, Wyoming, to lay pipes under the streets and alleys there for the conveying of both oil and gas, together, the same to be separated at the refinery. It is a "bluff" or something really valuable?

It was recently reported that the Pleyto Oil Company had brought in an oil well capable of producing 400 barrels daily, in Monterey county. The report has been denied. But the rumor sticks.

The Reid Land & Development Company is reported drilling near Porterville, Tulare county, with fair chances.

Edw. A. Hardison, known to California oil men from one end of the State to the other, because of the Hardison perforator, and the well known driller, Mr. Johns, have gone to Australia to drill on an island near that continent, for an English syndicate, which expects big results from the good showings there and the two men from California.

The California oil industry is to be represented at the Pacific Land and Products Exhibition, according to report, as a number of the leading companies of the State are said to have united for the purpose.

The sale of 2,225,000 barrels of oil, by the Independent Producers' Agency, to the Associated Oil Company, at a flat rate of 42½c per barrel is now said to have been accomplished, the sale of the 4,000,000 barrels, so loudly proclaimed, having fallen through. The action is the outcome of the Coalinga members of the Agency refusing to sell at the price set by the Associated some time since, with a raise of 9 2/10 cents in price, but a considerable lessened disposal of oil as the final result.

The *Army and Navy Journal* published a very interesting article recently in regard to the adoption of fuel oil by the United States Navy. The article gave a speech of Naval Engineer-in-Chief, H. I. Cone, advocating the use of fuel oil exclusively on battleships, and reasons for its adoption. The speech of Engineer Cone, which was given *in extenso*, was very interesting, instructive and valuable.

The Independent Producers' Agency has entered into an agreement with the Santa Fe Railroad to sell the latter company all the oil it needs outside of its own production at a price of 30 cents at the well, according to a dispatch from Bakersfield. The amount desired and said to be contracted for, amounts from 80,000 to 90,000 barrels per month, as happens to be needed. Thirty cents at the well, with no charges for transportation to be deducted therefrom, is better than 50 cents delivered with a 22½-cent charge per barrel for delivery.

It is now rumored that Standard Oil will build a refinery at a cost of $3,000,000 near Los Angeles; at any rate, south of Tehachapi. The Southerners are greatly excited by the report, as there seems to be a semblance of truth in it.

The Associated as a great refining company, in competition with Standard and Union Oil Company, is the latest news canard to run the gauntlet of the press. Every time the story passes through the news line it appears in a little stronger language so that now there is no doubt at all about the matter excepting when it will occur.

Foreign.

A note from Vienna, Austria, says that negotiations between the petroleum refining companies have resulted in an agreement covering the whole dual (Austria-Hungary) monarchy. The immediate effect was a sharp rise in the market price of crude oil of $6 a ton.

Consul Julean H. Arnold, at Amoy, China, has written a report on the production and use of oil in China; in Shensi, where the wells have been drilled, oil is produced and after being carted some 200 miles sells for 30c per gallon, United States coin, in competition with American and other foreign kerosine which sells at 43c per gallon. If Shensi were accessible the price would be but 15c per gallon. The dim light of the taper- burning rapeseed oil, which has served China for centuries, is fast giving way to twentieth century illumination. Standard Oil is bringing the light to the farthermost regions on earth.

Thos. Hayes, the well known petroleum expert of Coalinga, has just returned from a five months' visit to the oil fields of Egypt, Persia, India and Burmah, where he will be engaged hereafter. Mr. Hayes is quoted as saying that geological conditions in these fields are similar to those in Coalinga, but that the oil produced in the foreign fields is of a very high grade, selling for about $4 per barrel.

A new fire protective system has been patented in England, for the protection of oil in storage tanks. The protection consists of a coating of water given the entire tank, by means of turning on a pump which forces the water through a pipe encircling the top of the tank. This pipe is perforated at regular intervals with the holes directed at the sides of the tank at an angle of about 45 degrees; turning on the water causes a blanket of same to stream down the sides of the tank, at the same time cooling and protecting the oil in it.

The Great Western Railway Company, of England, is about to introduce the use of "petrol trains," as they are called in England, upon some of its lines, according to the *Petroleum Review*.

In addition to a contract placed with E. L. Doheney some weeks ago by the Waters-Pierce Oil Company, for 5,000,000 barrels of oil, the latter company has purchased 3,600,000 barrels more, making a total of 8,600,000 barrels under contract for delivery to Waters-Pierce by the Doheney companies. Reason for the new contract is the contract by Waters-Peirce with the Mexican railroad to supply it 4000 barrels of oil more per day, making a total of 10,000 barrels supplied by the one concern daily, to the railroad.

The report of the board of engineers of the Cunard Steamship Company to the company, recently, stated that it believed that fully 40 per cent of the gross expense of running the great vessels Mauretania and Lusitania could be saved by the use of fuel oil. It was pointed out that with the completion of the Panama Canal there will be lines of great oil carriers running from California to points on the Atlantic, which can carry oil reasonably enough to make its use a means of great economy. The only reason that the huge Atlantic liners do not burn oil now, is the lack of the necessary supply. With the canal, California oil men will enter into their own; a market as big as they can supply at good prices.

The decrease in the exports of petroleum from the United States was over 100,000,000 gallons; the export trade of the Pacific Coast, however, increased. California fuel oil is increasingly demanded.

American exports of kerosine to Germany increased 40,000 tons during 1910. In all, Germany imported 1,580,000 tons of mineral oil in 1910, of which amount 787,165 tons came from America. If the exports to England show a decline, those to Germany show a healthy increase.

The Egyptian Oil Trust, of London, England, has built an oil carrier named the "Zeitieh," which will be used in the Red Sea trade.

Ten Thousand Claims in San Juan Oilfields, Utah.

A Promising Region—Development Work Rapid but Poorly Done.

(U. S. Geological Survey Report).

Nearly 10,000 claims have been filed for locations in the San Juan oil field, Utah, during the last few years. Development has not, however, kept pace with the filing of the claims, for although a great deal of drilling has been done, most of it has been unskillful and strings of tools have been lost in many of the drill holes sunk. As a result, although 25 wells have been drilled, none are yet producing commercially.

Most Drillings Successful.

Oil was encountered, however, in nearly every place where drilling was attempted, and in the opinion of H. E. Gregory, of the United States Geological Survey, whose report on the field is published as a part of the Survey's Bulletin 431-A, now available for distribution, several of the wells already sunk are likely to prove profitable.

Fuel and Labor Problems.

The field is promising, according to the report, although the task of providing labor, fuel, and transportation is difficult. The region is arid. The nearest coal fields are in the Durango field, in Colorado, 100 miles to the east, and in the Navajo Reservation, 60 miles south. Labor will probably have to be brought in, though the Navajo Indians are intelligent and efficient workmen.

Pipe Line Suggested.

As a solution of the transportation problem the report suggests a pipe line along the Chinlee Wash to Ganado, thence to Holbrook and the railroads. Over this route oil would flow by gravity for half the distance. It is not likely that there will be a market for the oil near the field.

Eight Oil-Bearing Sands Found.

Most of the drilling has been done along Limestone Creek. Prospectors have found eight distinct oil-bearing sands, but in no place where drilling has been attempted have the three lowest sands been touched as yet. Oil seeps along the San Juan River have been known for years.

First Oil in 1908.

The first well was sunk in 1907 and oil was struck in March, 1908, and development since then has been rapid. In 20 of the 25 wells sunk oil of good quality has been found, but as yet there has been no commercial production. The public land in that part of the field that lies north of San Juan River was withdrawn from entry in October, 1909. The land south of San Juan River is probably in the western Navajo Reservation.

Gas in North Dakota and Oregon.

The same bulletin (431-A) contains an account of the natural gas region of North Dakota, by A. G. Leonard, and a brief report on gas prospects in the Harney Valley, Oregon, by C. W. Washburne. The Oregon prospects are from 90 to 105 miles southwest of promising prospects near Vale, also described by Mr. Washburne, and the gas appears to be derived from the same geologic formation, but the field has not yet been much developed.

North Dakota Prospects Good.

Most of the North Dakota prospects are in Bottineau and Lamoure counties. Gas is piped to Westhope, in Bottineau County, for domestic use from wells near the town. The gas sells at 30 to 40 cents a thousand feet. It has almost no odor and gives an excellent light.

Deep Drilling in Bottineau County.

Drilling to the Dakota sandstone, the probable source of the gas, is now under way in Bottineau County. The gas from the wells in Lamoure County comes from this formation. In most of the developed prospects the gas is of good quality and appears to be present in quantity sufficient to make it commercially important.

STANDARD GETS ANOTHER.

Standard Oil Company's well No. 4 on section 28, about three miles southeast of Taft, has come in good for 800 barrels per day. Good oil.

According to Clarence M. Fuller of Los Angeles, there is a big market in the East for California asphalt and road oil, which are recognized everywhere as the best road building materials in the world.

CALIFORNIA DERRICK

The Oil Authority of the Pacific Coast.

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A POPULAR ACT.

For the first time since he was saddled upon the country as Secretary of the Interior, Mr. R. A. Ballinger has done a universally popular act; one which we may truthfully say has met with the acclamation of his constituents: the Honourable Richard Achilles Ballinger has resigned!

Mr. Ballinger was a man who had the courage of his convictions, which he proved by holding so high an office in the face of so great and so united an opposition.

Mr. Ballinger, the President of the United States informed him, was bitterly assailed, horribly persecuted and the object of as vile and defamatory and generally diabolical a plot as was ever concocted by a blackmailing and viscious press to drag the name of a good and honorable man in the dust. The reason for the attack of the traducers of the good name of the Honourable Richard Achilles Ballinger seems to have been an impelling desire to perform a public duty, but same has not met with the approval of the great men at the Capitol, who needed the Hon. Richard, etc., to act in the interests of the Interests.

In all his administration of the affairs of the Interior Department, which hung so onerously upon his shoulders that he clung to them while the mud of the press plastered his name to divers black doings, in spite of a most liberal whitewashing, the Secretary never performed so popular a duty for his country as the one lately accomplished. He retires in time to escape the impeachment which the new Congress had decided would be his share in supplying an indignant country with news; and, safe and sound, among the dear properties in our northern states which he loved so well that he just couldn't resist, his conscious rectitude will aid him in securing that peace which passeth all understanding; and we would deem ourselves unduly harsh not to accord him the wish of the rest of the country—*Requiescat in Pace.*

A UNIVERSITY COURSE FOR THE "PETROLEUM ENGINEER."

We believe that we are correct in saying that at the present time there is no college in the world offering a special course to train "peroleum engineers." As a matter of fact there is no such recognized name in the university vernacular as "petroleum engineer" although there is every need both for the name and for the person. Geologists we have in plenty; good ones, too. Chemists whose specialty is oil are also by no means limited in number; the wonderful progress which they have made is evidenced by the number of by-products manufactured from petroleum today. Yet there is no such thing as a "petroleum engineer" and no such course offered in the universities as petroleum engineering, when, to the general knowledge of the man on the street the business of drilling oil wells, locating oil regions, and producing oil and its by-products, or in other words the conduct of the oil business, is one of the greatest businesses in the world. The oil business is a business which needs men of *special training*. Oil men who have been in the business the full fifty years during which it has existed as a commercial proposition acknowledge that they still have a vast field for learning ahead of them. The structural work connected with the oil business could well receive the attention of the faculties of our mining colleges. Petroleum chemistry likewise could well be offered in a special course to the student desirous of learning a splendid profession with chances ahead such as few professions offer now; it is acknowledged that although some 288 by-products or more are already extracted from oil, new and valuable discoveries to which it can be put will constantly be discovered, as the different properties of the different petroleums so far discovered are as various as are the colors of the oils. We cannot help commenting on some of the obvious advantages of the oil business and of the necessity for trained men to go into it—men who will have an idea of what progress has already been made and who will be prepared to continue improving conditions.

A university course giving a special training for "petroleum engineers" could not but be well patronized and assuredly, in the course of a few years, such a training will be demanded. The pioneer work has been done. The time for specialists has come and just as the Mining Engineer of today receives his preliminary training at college, so shall the future Petroleum Engineer receive his. The new course cannot come too quickly.

IN THE LIMELIGHT.

State Mineralogist Lewis E. Aubury is making a strenuous appeal for a get-together movement to request the Navy Department of the United States to use *oil for fuel* in place of coal in naval vessels, "especially on the Pacific Ocean."

This is a most commendable cause and should be given the heartiest support which the oil operator is capable of giving. In the first place, it is most patriotic, which is undoubtedly the reason why our oil producers have enlisted their aid towards the movement; in the second place, it will lower that surplus in a most pleasing manner; finally the saving effected by the Government in case of such a change, would be very great and the efficiency of the war vessels would be greatly increased while the various other points in favor of the use of oil, such as cleanliness, etc., are too well known to require comment. Needless to say, the petition and the sentiment back of it have the unqualified endorsement of the California oil man; and of the *California Derrick.*

A NEW TAX LAW.

It is no exaggeration to say that the California oil men are greatly wrought up over the new corporation tax law that was passed but a short time since, and which is just appearing as a great cloud on the corporation financial horizon. What the exact effect of the new law will be is not yet absolutely certain; but certain it is that if it is anywhere near as drastic as General R. L. Peeler of Coalinga thinks it will prove, then many and many an oil company will be put out of business. Consider the raise from $210 last year to $6800 this year, and you have an idea of what the new tax law proposes. General Peeler got a most sympathetic hearing when he showed the effect above noted; and so did a great many more speakers, the final upshot of the meeting at which the matter was discussed, being, that a representative of the various oil companies is to appear before the State Board of Equalization in an effort to ameliorate the apparently drastic effect of what seems certain to follow the working out of the new law. Just how hard it is for a corporation to exist nowadays was shown

by Mr. Thos. O'Donnell, of the American Oilfields Company, who declared that the new company has first to pay a fee, then a yearly license to conduct the business, now an increased tax for a franchise and, finally, a Federal tax; in all, four distinct taxations must be met. S. C. Graham, the well known Southern California oil operator, has written a letter of protest to the Collector of Internal Revenue, explaining the difference of levying a tax upon the property of an oil company, or its net income, and other real property. No answer has been received as yet, that we are aware of. A very interesting point in this connection is the upholding of the Federal Corporation Tax, by the Supreme Court of the United States, which, in an unanimous opinion just handed down, held that the corporation tax provisions of the Payne-Aldrich Tariff Act were constitutional. The fight against this tax law has been on ever since it was suggested by the President as a measure for the equitable raising of money. Inasmuch as the tax has been declared constitutional there is no getting away from it, and an amendment made to secure a different determination of the "net income" of oil corporations, as distinguished from others, seems at the present time the sole means by which the companies can escape this tax. Whether or not such an amendment will be made lies with the Government.

A VERY IMPORTANT RULING.

As we go to press we are in receipt of a most important decision in the United States Circuit Court, in Los Angeles, Judge Ross presiding, in which the suit of George D. Roberts et al. vs. the Southern Pacific Company, to dispossess the company of thousands of acres of oil lands in Kern and Fresno counties, valued at many millions of dollars, was virtually thrown out of court, the Judge sustaining the demurrer of the defendant corporation, and intimating that the Government, and not individuals, could properly bring such suits. Similar suits, as well as U. S. Government suits, are pending at present in the same court. Their outcome is thought to be foreshadowed by the above ruling.

MAY STRIKE THE CONSERVATION POLICY.

A measure which has awakened widespread interest has been introduced in the State Legislature by Senator Campbell, providing for a constitutional amendment *giving the State the right to tax the Federal Government lands of California.* The claim made by the father of the measure is that the Government has taken a great source of revenue from the State by withdrawing the lands from entry; such being the case the State should have some recourse, and the measure proposed places that power in its hands. If such a measure could pass, lands which would otherwise be providing a regular income to the State, had the withdrawals not been made, can still be forced to provide that income, unless it can be proved that the State has no power to tax Federal lands taken from the State. The question is a difficult one and raises a problem as old as the Federal Government itself; whether or not that Government has not exceded its constitutional rights.

UNION OIL COMPANY LOSES SUIT.

Superior Judge Clark of Ventura County has handed down a decision in the case of S. R. Smith vs. The Union Oil Company in favor of Smith. Virtually, the decision holds that the operator who is actually developing government property, rather than the company or individual who has a paper claim upon same, is entitled to ownership. The Union had the paper claim; Smith, O. J. Stowe, and others had organized a half-million capitalization company and were attempting to develop in earnest. The Union's claim extended back through devious ways to 1883; but Smith et al. had actually been attempting to drill the ground. The finding of the court was as follows:

"Smith's entry measures up to all the conditions imposed by the language quoted and through Stowe he had been diligently prosecuting the work toward a discovery for practically six weeks prior to the re-entry by defendant. Being thus in the rightful occupancy of the property he is entitled to the relief asked by his complaint. While the plaintiff's occupancy in the form required to hold the location had only extended for a short period of time, as against the defendant, who, with its predecessors in interest, had claimed this property since 1883, yet I believe that he is entitled to the equitable relief sought, and that the defendant should be enjoined from further disturbing or interfering with his work so long as he continues to diligently prosecute the same toward discovery. A denial of this relief would at once place valuable property, and possibly human lives, in peril and reduce the question of possession and occupancy to a situation not unlike that described by the eminent jurist writing the opinion in Katz vs. Walkinshaw."

ADMIRAL EVANS NOT AN OFFICER IN MEXICAN PREMIER.

A rumor has been going the rounds that Admiral Evans was to be an officer in the Mexican Premier Oil Company. This is not true, as the Admiral feels that the California Consolidated should receive all his attention. Admiral Evans is not connected with the new Mexican Premier Oil Company in any way excepting as a stockholder in the company, on the same plane with any other stockholder who buys at the price offered at present. In reference to this matter we have received a most courteous letter from the Admiral (who has our best wishes and kindest regard), in which he speaks plainly for himself, so that there may be no misunderstanding; it appeared in the last issue of the *California Derrick* that the Admiral's interest was heavy, and we understand that some criticism was leveled at the Admiral for being interested in another company. This criticism was undeserved; the extent of the Admiral's interest is unknown, although it was given out in a press dispatch from Arizona, on the date of the filing there of the articles of incorporation of the Mexican Premier Oil Company, that the Admiral was one of those most directly and heavily interested. The Admiral has written the following personal letter in his own handwriting to the editor of this magazine:

"California Consolidated Oil Company, Incorporated,
"Office of the President,
"1170 Broadway, New York, Cor. 28th Street.
"Robley D. Evans, President.

"Washington, D. C., March 5, '11.

"*Editor California Derrick.*

"DEAR SIR:—Referring to an article in your valued paper concerning my interest in the Mexican Premier Oil Company, I beg to say that I am not an officer of any kind in said company. I purchased stock of the company and stand on the same ground as any other shareholder.

"I am sure that the company will be well and honestly managed by Spellacy and Thompson and I wish them all success, as I do any honestly conducted concern.

"Yours very truly, (Signed) R. D. EVANS."

The Union Oil Company is to construct a great office building at the corner of Seventh and Spring streets, Los Angeles, to cost about or more than $1,000,000. The Union Oil Building Company has been formed to carry on the work, which is to commence immediately, according to press dispatches.

PRODUCTION OF FULLER'S EARTH.

(Report by United States Geological Survey.)

Domestic Output Fails to Supply Demand.

The production of fuller's earth in 1909 is just reported in an advance chapter of the Geological Survey's volume "Mineral resources of the United States, calendar year 1900." More than half the fuller's earth produced in the United States is mined in Florida, but the entire domestic production supplies only three-fourths of the home demand, about one-fourth of the amount used being imported. The value of the total production in 1909 was $301,604; the imports were valued at $101,151.

An Oil Clarifier.

Fuller's earth has been largely used for cleaning grease from cloth and furs, but it is now chiefly used in this country for clarifying oils. The report discusses the chemical composition of the material and presents theories to account for its peculiar properties.

The chapter was compiled by F. B. Van Horn, of the Survey, and can be obtained free of charge by applying to the Director, United States Geological Survey, Washington, D. C.

USES AND DESCRIPTION OF THE PLUNGER AGITATOR.

(By A. S. Cooper, E. M., Ex-State Mineralogist of California).

Very little oil in the Sunset Oil Field is raised to the surface by the ordinary pumping air or gas compressors on account of the heavy gravity of the oil and the strong pressure of the gas which have made pumps useless and very few are in use in the field. Oil is raised to the surface by the buoyancy of the natural gas liberated by agitation. Agitation can be created by use of a plunger agitator. A cut showing a view of this tool is given herewith and the following explanation will disclose the workings of same fully.

When a well is drilled, one string of casing, A—(accompanying cut)—Figure 17, is used to shut off the surface water. The second string B, is pushed into the oil sand and as soon as it has penetrated a short distance into same it is suspended so that it will not sink down to the bottom of the stratum and shut off the flow. This string of casing is partly used to prevent the effects of caving from the wall of the well. The third string of casing, C, usually six or seven inches in diameter, is suspended in the hole and closed at the bottom, and is used as a plunger. Two or three times a day this is lifted up and down and the wells flow oil and gas and also considerable sand through the annular space between the second (B) and the third (C) strings of casing. This method is practiced in most of the Sunset wells and so far has been successful.

When the plunger C is raised quickly the pressure on the underlying liquids is decreased and gas is liberated from its solution with the liquids. When the fluids are agitated the gas goes out of solution from the liquids at the bottom of the well instead of some distance up within it, or near the surface of the liquids in the well, where it is liberated through decrease of pressure by the ascent of the fluids towards the surface.

When the pressure is decreased by operating the plunger the gas goes out of solution instantaneously, and when once free returns into solution very slowly. The more viscous the oil the slower the gas goes into solution. Gas liberated by agitation acts as a gas lift on the liquids in the well. In general it may be said that gas liberated at the bottom of the well is more effective as a gas lift than where liberated by decreased gas pressure some distance from the bottom. The advantage of the Plunger Agitator is therefore evident.

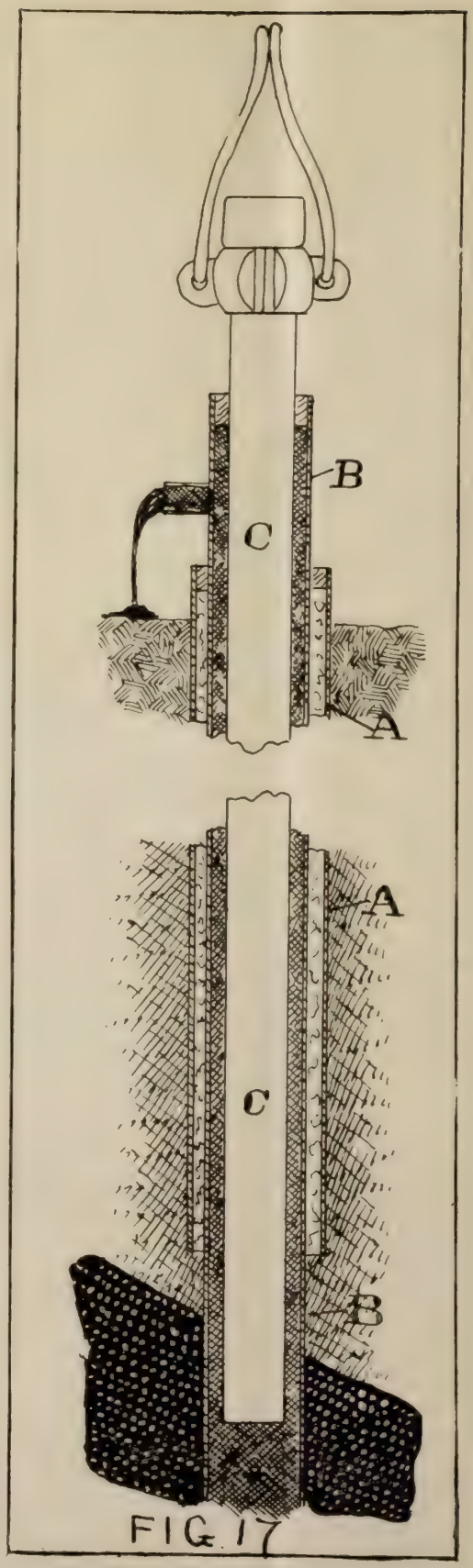
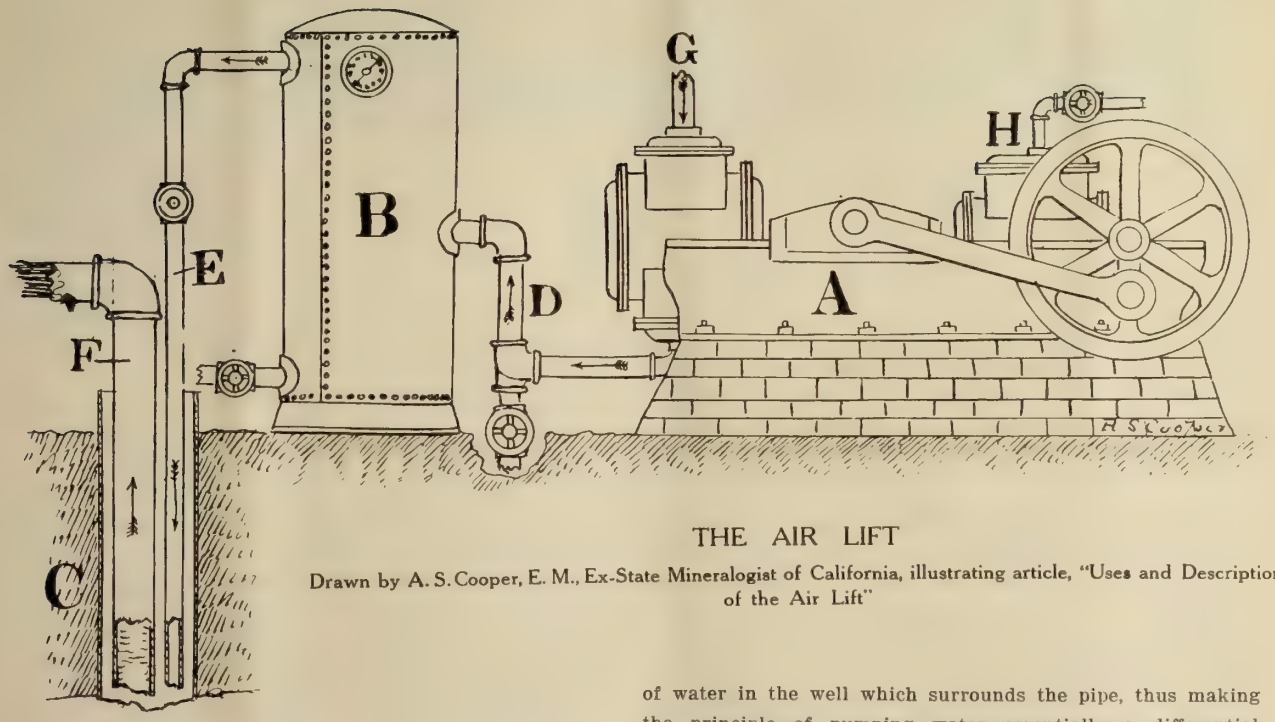
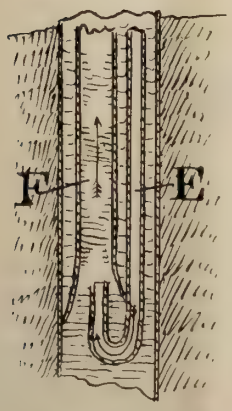


FIG. 17



THE AIR LIFT

Drawn by A. S. Cooper, E. M., Ex-State Mineralogist of California, illustrating article, "Uses and Description of the Air Lift"



Uses and Description of the Air Lift

(By A. S. Cooper, E. M., Ex-State Mineralogist of California).

The accompanying diagram of the Air Lift should be carefully followed in reading a description of the workings of same.

A is the compressor, B the receiver, C the well, D connecting pipe, EE pipe and FF flow pipe. Compressed air flows from the compressor A through the pipe D to the receiver B and through the pipe EE down the well C and up the flow pipe FF lifting the water from the well, FE.

The operation of the air lift is as follows:

Pressure in the air pipe EE must be greater than the column of water in the well which surrounds the pipe EE, and in quantity sufficient to make the ascending column of air and water in the flow pipe FF lighter than that solid column of water in the well which surrounds the pipe, thus making the principle of pumping water essentially a differential gravity system. The operation of this apparatus depends upon the buoyancy of the air introduced into the column of water in the flow pipe FF alternating with the liquid, the air forming virtually, pistons, more or less complete, and pushing the water upwards ahead of them.

The constant action of the compressor supplying the required amount of air, and the greater pressure of the solid column of water standing in the well above the bottom of the flow pipe FF than the pressure of the column of air and water in the flow pipe, constantly furnishing the water to same, keeps the air lift operating.

The less the lift compared with the submersion of the flow pipe FF, the greater the efficiency obtained. The efficiency is also greater when the air pressure exceeds but silghtly the pressure due to the hydraulic submersion of the air pipe.

Every oil or water well has its individual characteristics and conditions. Greater or less depth, quantity and tension of gas, amounts of liquids and their specific gravity and the rate and point at which they enter the well, the height of liquids in the well, amount of gas in solution with the fluids, free gas, hydrostatic pressure of the different waters encountered in drilling the well and other conditions should be noted in this connection.

Further conditions are: viscosity of oil, temperature of fluids and gases, character of the rocks in which water, oil, or gas is found—whether porous, seamed, sandstone, shale, clay, etc.,—the diameter of the different cross sections of the well, how cased, size of casing and so on *ad infinitum*. And, in the installation of new machinery every little consideration must receive the attention it merits in order to bring success.

LOST HILLS GROWING.

Latest reports from the Lost Hills country indicate that the new field is attracting much attention from oil men. The wells brought in in the new disrtict so far make a wonderful showing, for the reason that the drilling is very shallow and the gravity of the oil runs from 22 to 24 degrees Baume. There are six wells in the various parts of the field in the pay sands thus far; the deepest of them is but 1115 feet and the shallowest 515 feet. There are more than fifty rigs, half of which number are standard; the rest portables. Several wells are expected to reach the pay sands now, at any time.

Location of "Lost Hills."

The Lost Hills field lies just about 25 miles west of Wasco, a small station in the northern part of Kern County, on the Santa Fe railway. The road to the field crosses through Buena Vista Slough a distance of about six miles and, owing to the heavy rains for the past two months, most of the time heavy teaming into the field has been impossible; and much of the time it has been impossible to reach the field excepting on horseback. This of course has retarded development very greatly, but with the coming of favorable weather there is sure to be a great rush into this field. The freight yard at Wasco a greater part of the time during the rainy season has been loaded with equipment of all kinds for the different camps; freight transportation has been impossible, as even automobiles were mired down and abandoned along the road to the field.

As might be expected many exaggerated reports of strikes have reached the outside lately and by the time these reports were put into type they were so preposterous as to be ridiculous. The plain truth is interesting enough as it is, without any embellishment and seems to indicate that before any great length of time the Lost Hills district will be one of the State's well known fields.

A Little of the History of Lost Hills.

Government geological surveys have shown that oil existed in this field but the drilling to it was believed to be a matter of from four to five thousand feet. On August 2nd, 1910, Messrs. Martin & Dudley, two Visalia men, struck the second sands and produced oil at 515 feet on the northwest quarter of 30-26-21. They maintained silence in regard to their discovery; the hole was covered and the strike kept a secret until nearly the first of last October. On October 7th the Interior Department at Washington withdrew a large territory of land in the Lost Hills and the fact of the strike became known, when the rush for land in the field started in earnest. Previous to this, however, Martin & Dudley, (it is believed with the assistance of the Associated Oil Company), took options and made locations on all the land possible. Since October almost all of the prominent oil operators of the State have gone into the field, Standard, Associated, American Oilfields, Union and other great companies having secured lands on which they are now operating.

Appearance of "Lost Hills."

If the man who named the field "Lost Hills" would now come forward and give a reason for the cognomen he would confer a favor. The hills are certainly "lost," for excepting for a slight rolling the land is level with a low elevation from the Western side of the Slough. There is a steep declivity on the Western side of the field. The country is barren.

Producing Wells and Location of Same.

The six wells brought in are: Lake Shore No. 1, 515 feet, N. W. ¼ section 30-26-21; Devils Den Consolidated, 620 feet, W. ¼ section 30-26-21; Lake Shore No. 2, 540 feet, S. W. ½ section 18-26-21; Lake Shore No. 3, 480 feet N. W. ¼ section 32-26-21; P. & C. 1115 feet, N. E. ¼ of N. E. ¼ section 28-26-21; Marietta, 915 feet, N. W. ¼ 27-25-20. The only one of these on the pump has been the Lake Shore No. 1 which is producing about 300 bbls. per day. It is believed that the Devils Den well is even better than this, probably giving about 500 bbls. Several other drills are in the sands and with the return of favorable weather there is every indication that there will soon be some very important news from this field.

ASSOCIATED GETS A HIGH GRADE PRODUCER.

It is said that the Associated's well on section 26, Elk Hills, reported in the last issue of this magazine, is a very light oil, testing as high as 32° gravity, Baume. The well has been filled with mud, through which the oil oozes. A gate has been placed on it to keep it under control. The company is trying hard to suppress the news of the well.

The Lost Hills Development Company, capitalized at $25,000, fully paid, and owning 400 acres of land, in the Lost Hills district, is drilling two wells and starting a third, all near the Lakeshore producer. Company recently organized. Judge Frank H. Short is one of the company.

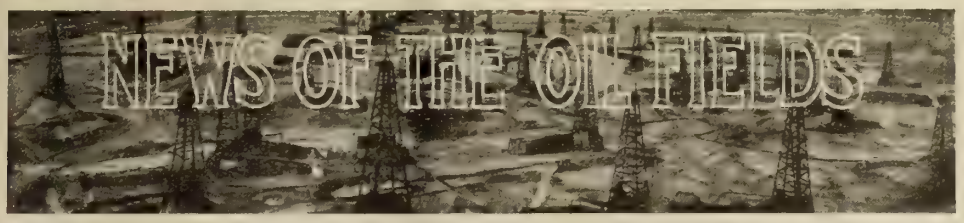
KERN TRADING AND OIL IMPROVEMENTS.

The K. T. & O. Company, the oil department of the Southern Pacific Company, is planning about $4,000,000 of developments. Wells are being started on section 11, 19-15, Coalinga, on the East Side; on the West Side it is said the company plans to double its present development work. Ninety strings of tools are said to be planned for the company's undeveloped properties in the Midway region. The investment of this amount of money and development on so great a scale is said to be the outcome of the lack of oil to be furnished the S. P. by the Associated Oil Company. Reports concerning the truth of this rumor are conflicting.

John D. Rockerfeller has just received a check for $4,050,000 —dividends as stockholder in the Standard Oil Company. Mr. Rockerfeller has now received $191,700,000 in dividends from the Standard. The net profits earned by the great corporation from 1882 to 1910, inclusive, have been $1,129,000,000, of which $710,000,000 has been disbursed to stockholders.

REDUCED STORAGE COST.

The Union Oil Company voluntarily reduced the price charged for storing the Independent Producers Agency's oil last month. The new charges are ½c per barrel per month in steel tanks and 1-3c per barrel per month in concrete tanks; a reduction of approximately 50%. The reduction is said to have come about as a result of the refusal on the part of the Agency to sell 4,000,000 barrels of oil to the Associated when negotiations, which were pending recently, fell through. Since then the Agency and the Associated are said to have made an agreement for the delivery of 2,225,000 barrels of oil, as chronicled in our last issue, but whether or not this will have any effect on the reduced storage has not yet been learned.



COALINGA---By Guy H. Salisbury,

California s Best Known Oil Correspondent.

El Cerrito Doing Well.

The El Cerrito Oil Company, operating on section 35, 11-23, located a little southeast of the old Sunset field, is reported as having indications of a good strike. The 10-inch casing was hung up at about 1,840 feet; the 8¼ inch was carried to about 2,121 feet, the indications at that point suggested the necessity of shutting off the water with the 10 inch, the 8¼ inch was pulled and the 10 inch was landed, the hole was bridged, and the water sand cemented off in very favorable formation to make a tight job at 1,847 feet. The cement is now being drilled out and we should know before the next issue just what the company has got. The 8¼ inch will be put back and carried through the oil sand. The 8¼ inch was carried into the oil sand about 55 feet and enough oil came up through the water to indicate an oil of better than 31 gravity, indicating the presence of lubricating properties. The present strike is looked upon as important on account of the gravity as well as for the fact that it will extend the Sunset field to the southeast; it will also pull the El Cerrito into shape after a struggle covering four years of persistent effort.

The New York Coalinga.

The New York-Coalinga Oil Company, which took an option on the property of the York Coalinga, being 40 acres in the northeast quarter of section 6, 20-15, one of the Burr Bros. ventures in this field: We understand that a nine cent assessment is now pending. The money coming in on this assessment is to pay off the indebtedness due on the personal property. The California National Supply Company holds a chattel mortgage on the personal property. There has been a payment of about $2,000 paid on account of the purchase price of the property. Robert Hayes Smith, I. L. Bryner, et als., hold the lease to this property and are assisting the managers of the New York-Coalinga to straighten out their financial troubles. There are 5 wells on the property, all fairly good producers when they were brought in; only two are now producing, three are temporarily suspended and as soon as money is available the management will try and get all of the wells on the pump.

Lake View's "Excellent Strike."

Again we are called to note the recurring strike on the Lake View Oil Company's well on section 26, 21-17. This time the flow was over the derrick. The report reached here from a Valley town, and caused some excitement, and in a short time fully 12 autos were on the road to the property, every one anxious to believe the report; past experience caused the "Missouri Instinct" to appear, and the "show-me' was silently present in force. There have been several gas blow outs in this well in the past three months, and this was used by interested parties to start something. In fact work was suspended at the time of the reported strike; but the crew has now resumed. These reports are very much regretted by the Lake View people, who believe a fake story has a tendency to discredit a district, and does not assist development of the hills.

Blair Oil Company.

The Blair Oil Company, section 14, 21-15: Well No. 2 is 2,160 feet deep, 10 inch casing; the manager will land this string and shut off the water at 2,310 feet; this depth is indicated by the drilling of well No. 1 as the proper place to shut off water. The pay sand is estimated to be about 2,650 feet deep. Jim Walp is on the drilling end of the work, and is very confident that he will have no trouble in reaching the pay sand with the 8¼ inch, unless another water sand is entered; in that event he will land the 6¼ inch. This is perhaps the most important work south of town, as this property lies two miles north of the Bohemian well, and will reach another oil sand (one in front of the Bohemian) and will get it in another formation.

Coalinga Mohawk.

The Coalinga Mohawk Oil Company, section 12, 20-15: The work is progressing nicely; well No. 1 has been cleaned out and is now back to production. Well No. 2 is shut down waiting for casing; well No. 3 is 4,450 feet deep, 6¼ inch casing, 28 pound; well No. 4 is 3,850 feet deep, 8¼ inch casing; the management expects the pay sand at about 4,500 feet. This is the light oil formation of this field.

United Development Company.

The United Development Company, section 19, 20-15; Reports say that well No. 2 is 1,450 feet deep, 10 inch casing; well No. 3 has landed the 16 inch stove pipe at about 450 feet, is now about 630 feet, 12½ inch; well No. 1 is making 200 barrels per day, is not being worked to full capacity until the tankage can be arranged.

Section Six Oil Company.

Section Six Oil Company, section 6, 21-15, (H. B. Guthrey's old well) has been cleaned out to 2,085 feet, the water will be cemented off above the oil sand. R. Baker, Water Commissioner, has charge of the work; he will endeavor to cut the water out from the oil sand, a work long delaid.

San Juan Oil Company.

The San Juan Oil Company, section 26, 20-14, (at one time known as the Coalinga Crude, one of the Burr-Preston companies) have cemented well No. 1, at about 1,000 feet; have landed the 8¼ inch string.

The Bohemian Oil Company, of Coalinga, has struck a splendid oil sand, producing oil testing as high as 37.8 degrees, Baume, at a depth greater than 3700 feet. The sand has been drilled into some twenty-five feet and a good pro-

ducer is thought to have been secured although definite news is yet lacking.

Esperanza Land & Oil Company's well No. 1, section 30, 21-15, Coalinga, is now down 3390 feet. Going further.

The Polvadero Oil Company, a Coalinga concern, has been reorganized.

The Stephens-Coalinga Mineral Oils Corporation has been incorporated with a capital stock of 1,000,000 shares, par value of 1 cent, to do a general oil business. Three cents has been paid in!

New York-Coalinga Oil Co., the "Burr" corporation, operating on section 6, 20-15, has taken back the property; property reported in poor condition.

Well No. 1, of Republic Oil Company, section 32, 19-15, came in recently at the rate of 800 barrels of 19° gravity oil per day. Now doing 400.

Coalinga National's well on section 8, 20-15, is doing 300 barrels per diem on the beam.

CALIFORNIA OIL FIELDS, LTD., PLANS EXTENSIONS.

A rumor to the effect that the California Oilfields Ltd., the greatest British oil company operating in California, is to do an extensive lot of drilling has in a measure been corroborated by the arival of several carloads of drilling materials at Coalinga consigned to them. Five rigs have been started on sections 27 and 34, 19-15, and as soon as same are completed a similar number of strings of tools will be started.

LATEST QUOTATIONS ON SAN FRANCISCO STOCK EXCHANGE.

Following are quotations on stocks listed on the San Francisco Stock Exchange which have met with recent inquiry. Stocks not bid for or which have lain dormant for some time and on which we could secure no quotations, omitted:

	Bid.	Asked.
Alma	.....	.95
Amalgamated Oil	42.00	...
American Petroleum (pfd.)	40.00	78.00
American Petroleum (com.)	40.00	52.12½
Amy	.....	.75
Apollo	.....	.10
Associated Oil Stock	46.75	47.25
Associated Bonds 5s	.....	99.00
Bay City	.45	...
Blue Moon	.....	.05
Brookshire	.....	1.25
California Midway	.54	.....
California Seaboard	.....	.25
Caribou	1.40	1.42½
Claremont	1.20	1.30
Coalinga Central	.55	.....
Coalinga Mohawk	.95	.....
Coalinga National	.20	.21
Consolidated Midway	.13	.14
Cresceus	.40	.50
Dabney	.....	.10
Del Rey	.14	...
De Luxe	1.30	
Dominion	.....	.85
Empire	1.55	.....
Enos	.48	.55
Illinois Crude	.20	.....
Lucile	.....	12.50
Maricopa National	.25	..
Mariposa 36	.....	1.80
Mascot	.....	2.40
McKittrick	.15	.....
Monte Cristo	2.15	.....
Nevada Midway	.15	.....
New Pennsylvania Petroleum	.52	.55
Occidental	.15	.....
Pacific States Petroleum	.25	.27
Paraffine	.....	.85
Palmer	1.45	1.47½
Palmer Union	.58	.59
Peerless	3.25	4.50
Piedmont	.....	.10
Pinal	4.07½	10.00
Premier	.60	.65
Record	5.50	.....
Republic	.56	.57
Rice Ranch	.55	.90
Rico	.....	1.80
S. F. & McKittrick	12.00	25.00
Sauer Dough	.....	1.65
Section 25	30.00	..
Sesnon	8.00	.....
Shawmut	.....	.50
Silver Tip	.....	1.10
Sovereign	.15	.20
S. W. & B.	.28	.30
Sterling	1.45	1.60
Sunset Monarch	.50	.....
Superior	.15	.....
Turner	1.30	.....
United Oil	.....	.75
Wolverine	.....	2.65
Yellowstone	.....	.20
Storage Certificates	.34	

LOS ANGELES QUOTATIONS.

(Producers not quoted above.)

	Bid.	Asked.
Columbia	1.13	1.20
Euclid	.....	.55
Fullerton	.....	4.98
Globe	.05	.15
Jade	.40	.40½
Mexican Petroleum	.60	.....
Mex. Pet. Ltd. (pfd)	64.12½	64.50
Mex. Pet. Ltd. (com.)	31.00	31.25
Mascot	.....	3.00
Olinda Land Co. (oil)	.50	.57
Pennsylvania Midway	.21⅝	.24
Perseus	.....	.20
Piru Oil and Land Co.	.....	.50
Section Six	.....	.50
Traders	75.00	100.00
Union Oil	101.00	101.12½
Union Provident	99.87½	100.12½
United Petroleum	100.25	
Western Union	90.00	100.00

NON-PRODUCERS.

	Bid.	Asked.
Nevada Midway	.16	.....
Oleum Development Co.	.04⅝	.04⅞

Midway Union Oil Company, Midway field, is offering a $25,000 one-year 7 per cent convertible gold note issue to public, for purpose of completing well No. 1. Notes secured by property of company.

HONOLULU CONS. OIL COMPANY WILL SEPARATE GASOLINE FROM ITS GAS.

As was reported in the last issue of the *California Derrick* the Honolulu Consolidated Oil Company, operating in the Buena Vista Hills, will install a plant for the extraction of gasoline from the gas produced by various wells on the lease. The great "gasser,' it is said, will not contribute to the gasoline producer machines, inasmuch as the gas produced from this well is a dry or marsh gas, (methane gas), passing through no petroleum or little if any, and giving in consequence little or no gasoline. Eight 80-h. p. gas compressors for the purpose of extracting the gasoline from the gas by the Bessemer process, are said to have been purchased by the Honolulu people, although they are so reticent on the subject that little can be definitely learned. It *is* known, however, that President John Carruthers and W. D. Shira, head sales agent for the Bessemer Gas Engine Company of Grove City, Pa., have been in the fields, and furthermore that an experimental machine has been in use on the property with the results above mentioned. It is said that the eight machines will treat 4,000,000 cubic feet of gas per day and that from this will be extracted some 8,000 gallons of gasoline, leaving approximately 3,000,000 feet of gas free of gasoline but still excellent for illuminating and heating purposes. Extraction of gasoline from gas in California was first proposed by the *California Derrick*, and since has met with a most enthusiastic endorsement by operators in this State. Mr. A. S. Cooper, formerly State Mineralogist of California, has written a very interesting paper on the extraction of gasoline from gas which we print in this issue, and which, according to several persons capable of judging to whom we have shown it, will be very valuable to oil operators in the California oil fields desirous of separating gas from gasoline. Interesting articles about the "Bessemer" process appeared recently in the "Oil and Gas Journal."

PENN. MIDWAY'S GOOD WELL.

Well No. 1 of the Pennsylvania Midway Oil Company, operating on section 15, 32-23, was brought in recently at a depth of a little less than 2,700 feet, and proved to be a great producer, being good at the present time for 1,000 barrels of oil per day. The oil is of a light gravity and the company is reported to have contracted 500 barrels to the Standard Oil Company daily, at a price of 45c per barrel. The Pennsylvania Midway leases from the Jade Oil Company and will provide a handsome royalty to that company as well as dividends to its stockholders.

BLOWOUT OF FORCE.

Well No. 6, on the Ruby lease, (Maricopa) experienced a blowout some time back which was both instructive and costly. The well was being re-drilled and cleaned when the blowout occurred. Two men, who were working on it heard a slight rumbling which warned them to get clear of the derrick only in time to avoid serious injury. A terrible volume of gas suddenly shot up the pipe and continued for several hours, throwing tons upon tons of sand, rocks and other matter high in the air. It is said that for a distance of two hundred feet around the ground, roofs of dwellings and everything in the circumference mentioned was covered to a depth of more than a foot with dirt. Fire is alleged to have shot out of the well to a height of 100 feet. Great rocks with trains of sparks shot high above the derrick, soon wearing the top of same away. It was feared that fire would destroy the well, but it never had a chance to become ignited, the gas smothering the sparks for lack of oxygen. This sort of pyrotechnics, while not a matter of everyday occurance, is not unknown to the Midway region, it having occurred several times within the last year.

STRUCK SALT WATER.

The assertion often made Mr. J. E. Breitwiser of Los Angeles, to-wit, that any well drilled deep enough would strike salt water, seems to be founded in fact. A number of deep wells in the Valley fields have struck salt water, the latest being the well of the Hart Oil Company, on section 13, 31-23, at a depth of 3,600 feet. It seems apparent that this water is coming from the bottom of the hole and not from an upper stratum, as suggested by some persons. The well, however, will be continued down to prove the property.

LUXOR OIL COMPANY.

The Luxor Oil Company, section 22, 32-24, is down a little more than 1850 feet, and has just changed from the six inch drill to the four inch. The Luxor is a San Francisco company and the officers are reported very pleased with the well thus far.

EL CERRITO SAID TO HAVE OIL.

The El Cerrito Oil Company, operating southeast of Sunset, is said to have a good well, producing oil of 31 degrees gravity, Beaume, good for lubricating purposes. The well is 2121 feet deep and the water was shut off with ten-inch casing at 1847 feet, after the company had drilled some fifty-five feet into the sand. Captain John Barneson is generally thought to be one of the most heavily interested in the company.

The great "gasser" of the Honolulu Cons. Oil Company, which caught fire early last month, lighting up the country for miles around, with a flame 200 feet high, was finally extinguished by steam from six 40-h. p. boilers. Superintendent is since quoted as saying that the pipe would be put down further to kill the flow of gas and that drilling for oil will continue.

NO GUSHER ON SECTION 26.

A recent story to the effect that the Associated Oil Company's well on section 26, Elk Hills, had come in a gusher is apparently unfounded, being generally denied. The well is 3,500 feet deep and has passed through several oil strata which were not thought a profitable proposition.

SUIT AGAINST SUNSET ROAD AND UNION OIL COMPANIES.

The Mercantile Trust Company of San Francisco has entered suit in the Superior Court against the Sunset Road Oil Company and the Union Oil Company to determine the number of outstanding bonds of the Sunset Road Company, appoint a receiver and order a foreclosure and sale of the property of the company. This suit comes as a sequence of a suit recently instituted by the Kern Valley Bank through John Baker, Jr. Twenty year 5 per cent bonds were issued July 7, 1910, the principal and interest payable at the office of the plaintiff.

DRILLING COMPANY INCORPORATED.

The California Well Drilling Company is the name of a new incorporation which recently filed papers with the Secretary of State. The company has a capital stock of $250,000, the principal place of business being located in Taft. The officers and directors are: James F. Ross, Elbert T. Edwards, W. L. McCormick, J. H. Ross and M. A. McCormick.

SLIGHT LOSSES BY FIRE.

The United Oil Company's will No. 1 on the property near Midland, caught fire recently, the rig and tank of oil going to the flames. The well was producing 300 barrels per day on the pump. Cause for fire not stated. Well No. 2 was shut down while the fire was in progress. The United lost very little by the fire. The company, by the way is doing a lot of development work and is becoming one of the most active in the district.

OIL WELL SUPPLY COMPANY GETS JUDGMENT.

The following appeared in a recent issue of the Midway Driller, the reliable newspaper of Taft, California:

"The Superior Court has awarded judgment in favor of the Oil Well Supply Company against the One-Eleven Oil Company for $2621, interest and attorney's fees."

FELLOWS HAS NATURAL GAS.

The town of Fellows, terminus of the railway, is now provided with natural gas, which is generally appreciated. In a short time Maricopa will be likewise blessed.

AMERICAN OILFIELDS COMPANY TO HAVE TOPPING PLANT.

The demonstrated success of the topping plant of the Santa Fe has induced the American Oilfields Company to install a toping plant at its property near Fellows. It is said that the plans for the plant indicate a large investment on the part of the $25,000,000 Doheny company. We have not heard whether or not work has yet begun.

SPLENDID ELECTRIC SERVICE FOR WEST SIDE FIELDS

The San Joaquin Light & Power Company has begun work on the reconstruction of the electric light and power system of the Midway district. The plans embrace the installation of new poles, more transformers, new cables and re-wiring. The West Side lines are not yet connected with the main system and until such conection takes place the Maricopa plant, lately taken over by the San Joaquin Light and Power Company, will be used. A sub-station will be built on the edge of the town. The work should be completed in a couple of months.

CALNAVA-MIDWAY.

(From Midway Driller).

The Calnava-Midway Oil Company is the latest to begin operations in the Midway field. The company owns the southwest quarter of section 8-31-23, and spudded in its No. 1 well recently. San Francisco and Nevada people comprise the company, the officers being Geo. J. Kirby, president; Ives E. Cobb, vice president; Capt. K. J. Hampton, treasurer; A. A. Burlini, secretary. They, with Major C. E. Stanton, form the board of directors. George H. Robinson is field superintendent.

BUICK OIL COMPANY GETS "GUSHER."

The Buick Oil Company has brought in a well on section 32, 31-23, Midway, which makes the newspapers both East and West, that attacked the company, appear in a very unfavorable light. The well came in with a very strong flow and has held up excellently. At its flush it produced over 3,000 barrels per day of an oil lighter than 25 degrees gravity, Beaume, 100,000 barrels of which was almost immediately contracted to the Standard Oil Company at a good figure. The oil sand was struck at a depth of 3197 feet and was penetrated 103 feet. The flow comes through a 2 5-16 inch pipe and is under perfect control. There were no "fireworks" when the well came in.

OIL COMPANY IN WATER BUSINESS.

The July Oil Company, which got water in both of the wells sunk last summer, on section 26, about three miles south of the city of Taft, has gone into the business of supplying water to the needy. Compressors and condensers are being installed at the wells for the purpose of distilling the water and then piping it to Taft for domestic use. It is said that the company may also sell water to the North American Oil Company, at the well.

STANDARD'S WATER CONNECTED WITH TAFT SYSTEM. MIDWAY NOTES.

The Standard Oil Company has given the city of Taft permission to connect the Taft Public Utilities Company's line with the Standard water line, for protection in case of fire, as reported some time since in this magazine, and the connection has now been made. The combined pressure will now throw a ⅞-inch stream a distance of 125 feet, giving the city comparative safety. The Standard is much praised for this act of kindness.

MIDNWAY NOTES.

Well No. 4, section 28, 32-24, Standard Oil Company, making 800 barrels of 26 gravity oil daily.

Well No. 9, section 30, 32-24, Standard Oil Company, making nearly 7000 barrels per day.

Well No. 1, section 18, Standard Oil Company, making 500 barrels. Company has 29 wells drilling and three suspended in this district.

American Oilfields Company is now producing 125,000 barrels per month.

Western Minerals has three wells drilling and one producing in Sunset.

The Santa Fe brought in seven wells in January; all good. Has 43 producing wells, 14 newly completed rigs, 19 wells closed in, two deepening and a production of some 170,000 barrels monthly.

SUNSET MONARCH HAS SECOND LAKEVIEW—MAYBE.

The Sunset Monarch Oil Company's well "E," eight hundred feet from the Lakeview gusher, and 240 feet deeper, has struck the Lakeview formation, apparently, having come in with an initial production of 20,000 barrels in fourteen hours, or about 24,650 barrels per day, the flow coming in through a six-inch pipe. The well proves that the Lakeview did not ruin the formation as many oil men had thought, for the oil is pure and free from water; also, it proves that the Lakeview did not exhaust the sands and that a great pool lies beneath section 30. The company has three more excellent chances to get the same sand, as three other wells are being drilled on the section, one within 200 feet of the Lakeview. Well "E," which has burned once already, would have been hailed as a monster (which it is), would have been the Mecca for hundreds and hundreds of spectators and the center of conversation of all the operators in the State, had it appeared before the famous Lakeview. Today the remarkable production elicits perhaps a half-column in the press and the oil operator merely says: "That so? Good well, eh?" which shows the difference a little time will make. Gushers are no longer "ninth wonders."

MADISON HAS GOOD WELL.

The Madison Oil Company made two shipments in February. A conservative estimate of the production of the company's well on the Kern River lease puts same at from 1500 to 1600 barrels per month; a good producer for Kern River. It is understood that the company will shortly begin the drilling of another well.

TEMPLOR McKITTRICK OIL COMPANY.

We have reliable information to the effect that well No. 1 on the western portion of the company's holdings in Sunset has been placed again in commission and is producing a good 50 barrels per day, on the pump. As this production is coming from depth of only 840 feet the management is very much encouraged with the outlook and believes that a good production can be obtained from shallow wells in this portion of its holdings. The company has considerable oil in storage on the property which is being added to daily by the production from well No. 1. The grading has been completed for the spur track being run in by the railroad and material is now on the ground for construction of same. Several stockholders of the company recently visited the various leases and expressed satisfaction over the good condition in which they found them.

MIDWAY ALLIANCE OIL CO. AND PYRAMID NEWS.

The Midway Alliance Oil Company, a subsidiary of the Pyramid Oil Company, has erected a 106-foot derrick on its 100-acre lease in the S. W. ¼ of section 30, 32-25, Buena Vista Hills. The company has a combination drilling outfit. Gas will be used for fuel, a pipe having been laid between the Honolulu and Alliance properties.

Pyramid's Santa Paula well has passed through 300 feet of the best kind of oil sand, producing a greenish oil said to test as high as 36° gravity, Beaume. Well is said to be deepest ever drilled in Santa Paula field, and is reported by one newspaper to be good for 250 barrels per day. The company has had very good luck.

SUES MANHATTAN MIDWAY.

Charles Ladd as holder of a mortgage against the property of the Manhattan Midway Oil Company, operating on the southwest quarter of section 32, 32-24, has sued for judgment of $14,628.68, same being balance due on promissory note given by the company to H. C. Stratton for $20,000 in January, 1909. The sum of $831.40 as expenses of filing the suit is also asked.

S. E. Vermilyea and E. E. Edmonds are sued as guarantors of the note. The Independent Producers' Agency, L. P. St. Clair, H. H. Welsh, Guaranty Oil Company et al., are sued as claiming some interest in the Manhattan Midway's property.

Sir R. A. Hampton, Gerald Hampton, his son, E. E. Head, W. J. Thornx and J. W. Reid, all of England, visited the lease of the Mountain Girl Oil Company, Midway, recently, it is thought as prospective investors.

The Associated Supply Company of San Francisco and the King Lumber Company of Bakersfield have filed a petition in the United States District Court, asking that the Midway Security Oil Company of Kern county be adjudged bankrupt.

F. J. Cavanaugh, who owns a tract of 1047 acres of land in the Carissa region, has given permission to J. W. Barneburg and R. A. Wickenden of Santa Maria to drill a well for oil on his property. The pact entered into gives the contracting drillers until November 1st, of this year, to begin work. The operations will be watched with unusual interest by both Midway and Santa Maria oil operators.

The new power plant of the Y. M. C. A. building in San Francisco is equipped with three Franklin water tube boilers with an improved furnace for burning oil, supplied from a 4,500 gallon tank.

"Oil pots" have come into the fashion again as a preventative against freezing orchards. Farms at Hutchinson, Kansas, are being provided with these pots, which burn oil and by their heat keep the trees warm enough during the period of the "freeze" to save the fruit. One pot is used to each tree and pots are placed between the trees in rows. The method so far has proved very successful.

PALMER UNION OIL COMPANY.

Palmer Union well No. 1 is almost ready to be brought in, and a gusher is anticipated, the entire property of the Palmer Union being believed to be an extension of the wonderfully productive Palmer lands. The gas pressure at the present time is very great and forces sand through the perforations in the casing. Well No. 2 of the Palmer Union is down 1682 feet; drilling has been delayed because of a washout on the railroad which held the casing necessary to continue, somewhere on the way. No. 3 is 950 feet down and no troubles thus far. The drillers are ready to commence operations on the Tapo lease of 400 acres.

CAT CANYON OIL COMPANY.

The Cat Canyon Oil Company, operating in Cat Canyon on what is generally believed to be a continuation of the Palmer formation, is doing well, pounding downward steadily. Depth of well is now something past 950 feet; no difficulties exper-

ienced. Messrs. Hopkins-Maltman Company, of 332 Bush street, San Francisco, are financing the company, and it is generally conceded that they have the right location for a splendid well.

GUARANTY OIL COMPANY TAKES OVER BIG LOS ANGELES REFINERY.

We have just received a special dispatch from Los Angeles saying that the United Oil Refineries Company of California, with a plant and business valued at $400,000, has been taken over for that amount by the Guaranty Oil Company. The refinery covers six acres in the industrial district of Los Angeles and has a daily capacity of 5000 barrels of oil. The Guaranty Oil Company recently announced extensive plans for the future, and the acquisition is only in line with the avowed policy of the company to enter on a large scale into production, transportation and refining. It is arranging to build a plant at San Pedro (Los Angeles harbor); and its affiliated organization, the Guaranty Pipe Line Company, is nearly ready to construct a line from the West Side fields to San Pedro and to another port farther up the coast at a point not given out in the dispatch, having arranged to place its entire $2,000,000 bond issue for that purpose.

VENTURA NOTES

Ventura county fields are suffering from the deluge of rain which has paralyzed operations the past few weeks to a large extent, but which is now over with, so that operators are picking up heart again and business can again be carried on. The roads have been in such a poor condition, with washouts, slides, breaks etc., that it has been impossible to haul materials to the scene of the various operations. Santa Paula has probably experienced the worst effects of the rain, although Sulphur Mountain is a very close second. In the Little Sespe almost all operations were suspended for approximately three weeks. Following are a few reports on various companies in Ventura:

The Puritan Oil Company, on Sulphur Mountain, Santa Paula field, is down 1,275 feet, with 10-inch casing, having landed the 12½-inch at 1,220 feet. Some oil and gas pressure noted.

The Santa Clara O. & D. Co., Santa Paula field, has reached a depth of about 300 feet. The company recently changed managers, Mr. L. W. Winton now being in charge of field operations.

The Atlanta Oil Company, Sulphur Mountain, is preparing to erect a rig, preliminary to drilling.

The Big Sespe Oil Company in the district of the same name, is down 600 feet or more with well No. 6.

The Henderson well in Wheeler Canyon, on a lease from the Union Oil Company, is down over 1,300 feet with well No. 1. Good prospects.

The Ramona Home, northeast of Piru, is down about 775 feet.

SANTA MARIA

PALMER OIL COMPANY.

The whole Santa Maria District has been deluged by the rains of the past few weeks, and therefore not much news is available as telegraph, telephone and even mail communication was for a time delayed. However, we have it from the office of the Palmer Oil Company that their properties are in the very best possible condition.

Well No. 1 is producing at the regular rate of between 1600 and 1700 barrels per day. Well No. 2 is flowing approximately 9000 barrels. No. 3 is shut in, owing to the bad weather conditions, but will soon be reopened and cleaning resumed. No. 4 is out of commission while the tubing is being pulled preparatory to installing a new pump, when it will be put back to work again. No. 4 has produced as high as 5000 barrels per day. No. 5 is down 2730 feet; formation, gray shale. No. 6 has just been successfully cemented; drilling will be immediately resumed.

It might be interesting to state that Palmer No. 1 has now produced more than a million and a quarter barrels of oil, during two years continuous gushing, and that it apparently has a long life ahead of it, while the quality of the oil is steadily bettering. No. 2 began gushing at the rate of 8000 barrels per day when brought in last July, and is increasing the output. Nos. 3 and 4 are both gushers and altogether the Palmer has on its hands the finest aggregation of oil gushers ever brought in by one company in this State, outside of the Union, Standard or Doheney companies. It is said that the Palmer will complete tanks with 750,000 barrels storage capacity within the next sixty days; story not confirmed yet.

PRODUCTION OF OIL IN THE UNITED STATES IN 1910—APPROXIMATES AND COMPARISONS OF THE VARIOUS FIELDS ARE INTERESTING.

For greatness of scope, comprising as it does a review of the history of a vast industry carried on all over a continent, and for carefullnes and accuracy, the review of the **Oil, Paint and Drug Reporter,** of the oil conditions in the United States in 1910, field by field in detail, with close analyses of all the conditions which prevailed during the year, was truly a splendid achievement. We should like to give the entire report to our readers, detailed though it is, for a more meritorious review of conditions as they **are** and **have been** has never before come under our notice, outside of Governmental statistics and work.

The **Reporter** begins the review by saying that "Petroleum history was made in this country during 1910." They then show why such is the case. The petroleum production of the United States jumped from 182,134,274 barrels in 1909 to approximately 213,500,000 barrels in 1910, according to their figures, which exceed the estimates of the Geological Survey by some 9,500,000 barrels. The estimated gain is, therefore, 31,365,726 barrels. The greatest part of this gain is, as is generally known, due to the gain in the production in California. We quote the following from the review in question:

"The gain in the 1910 production is to a large extent due to the phenomenal results achieved in California. This State is credited with an output of nearly 78,000,000 barrels, an increase of almost fifty per cent of the 1909 yield and representing practically one-third of the country's 1910 production. The value of California petroleum exceeded the gold output. This remarkable showing was in a great measure due to the unusually prolific resources of the Sunset-Midway field. Wells drilled in the district established new records of productiveness and one of these, the famous Lakeview gusher, has probably not been equaled in the history of the petroleum industry of the world. It was brought in last March at a rate estimated at 10,000 barrels a day, later increasing its capacity to about 30,000 barrels .Occasionally it placed to its credit 60,000 barrels during a single day. After about nine months of steady flowing it collapsed as a result of salt water breaking into the oil sand. During its career it was reputed to have produced over 8,000,000 barrels of oil, or more than one-tenth of the total State's output. The Santa Maria field contributed about 20,500,000 barrels to the year's aggregate. Coalinga was second with nearly 19,000,000 barrels and Kern River third with about 14,500,000 barrels. The total consumption of California petroleum during 1910 is placed at 65,800,000 barrels, representing a satisfactory gain consistent with the steadily broadening markets for fuel oil, for which the product is especially adaptable."

It will be noticed that the **Reporter's** figures differ somewhat from those given out by the **California Derrick,** but that is only to be expected, as all figures are but approximate, there being no absolute knowledge as to production obtainable. The **Derrick's** approximation was somewhat more conservative than the **Reporter's,** but no one can tell **exactly** the amount of oil produced last year.

Next in production to California comes the Midcontinent field with an accredited output of 53,500,000 barrels for the year; a splendid showing and one which surpassed general expectations, the gain over 1909 being approximately 3,695,000 barrels. Increase was caused by the advance in prices, due in turn to the extension of the Midcontinent market by pipe line.

Illinois was third, following Midcontinent. The total 1910 production is approximated at 33,000,000 barrels, a gain of about 2,000,000 barrels over 1909. Market conditions and increased facilities by pipe line extensions are given as the reason for the increased production.

Following Illinois is the Appalachian field, comprising Southern New York, Pennsylvania, West Virginia, Southeastern Ohio, and Kentucky. A separate review of each of these regions is given in the **Reporter,** but we believe that the aggregate production figures will furnish our readers with as close information as they desire. This aggregate places the 1910 output in the neighborhood of 26,550,000 barrels as against 26,535,844 barrels in 1909. The unfavorable bearing of the crude market and the steady drain upon the resources by the persistent drilling of many years have un-

doubtedly been the factors for a decreased yield in most sections. Features in these regions were the marked decline in the Kentucky production and the pulling and abandoning of approximately 2700 wells in the Ohio and Indiana fields.

Next to the Appalachian field in production, come the Gulf Coast fields of Texas and Louisiana, with a combined total production of 15,894,258 barrels, a gain of nearly 4,000,000 barrels over the previous year's output. This includes the Caddo, Louisiana production. The **Reporter** says that the development of this field was the leading event in the section in 1910, its contribution to the year's aggregate being given as 5,654,114 barrels, against only 985,226 barrels in 1909 or approximately six barrels in 1910 for every one produced in the previous year.

Outside of these fields the miscellaneous production of the entire country is reckoned at from 350,000 to 500,000 barrels and of the fields not mentioned already Wyoming is regarded as the most promising, with Utah a close second; but both of the fields are hampered by the great lack and handicap of proper facilities for development.

The following table, showing the wonderful development of California in comparison with the other great fields of the country, will be of great interest to our readers. To quote directly from the "Reporter," it "presents the production of petroleum in the various fields of the country for the last three years. The statistics for 1908 and 1909 were compiled by the United States Geological Survey. Those for 1910 in the California, mid-continent and Gulf coast fields are prepared by our correspondents in close touch with actual field conditions. In the other fields of the country the 1910 figures are based upon the most reliable data obtainable at this time:—

	1908	1909	1910
Appalachian	24,945,517	26,535,844	*26,550,000
Lima-Indiana	10,032,305	8,211,443	*6,600,000
Illinois	33,685,106	30,898,339	*33,000,000
Mid-continent	48,323,810	49,804,922	53,429,313
Gulf	17,318,330	11,912,058	†15,894,258
California	44,854,737	54,433,010	77,707,546
Other	412,674	338,658	*338,000
Totals	179,572,179	182,134,274	213,431,117

*Approximately.

† Includes Caddo, La.

* * * *

Refined and Products.

Treating of our trade in refined and products the "Reporter" gives a remarkable analysis of the conditions prevailing last year. We are pleased to quote the following: "The year under review (1910) has been marked by developments of the most radical character in the history of the illuminating oil industry in this country, if not in the world. The unprecedented production of crude in practically all countries led to the most drastic measures in the attempt to force consumption to anything approaching a commensurate extent. The illuminating product, the most material factor in the refinment of crude, naturally became the basis of attack. The waging of a sharper campaign assumed all the greater force in this country as a result of the dependence upon foreign markets for an outlet of our petroleum products, probably 60 per cent entering into consumption abroad, and also by the fact that the output of illuminating oils had been forced to uncontrollable limits in the refinement of crude designed primarily to bring the yield of the products for motor consumption to the steadily broadening requirements. Thus the illuminant became more or less of an incident, but one of such proportions as to necessitate the most heroic treatment in meeting. The leading foreign producing companies were keen to realize the extremity to which the situation had been driven, and tangible evidences were soon at hand that prices were yielding to the extraordinary pressure in both the home and foreign markets. Economical consideration appeared to be lost sight of in the intensity of competition and prices for illuminating oils have reached a low record level within the last year. American interests have been subjected to prejudicial hostility on the part of several of the foreign governments within the realms of which American refiners had established a favorable commercial recognition for their product. Despite these handicaps there are evidences that American petroleum has maintained a fair proportion of the foreign trade, although the records of the previous few years are not approached in that of the year under review. Advance government statistics give the exports of illuminating oils for 1910 as 940,247,039 gallons, valued at $55,642,368. In 1909 they amounted to 1,046,401,072 gallons ($67,814,406) and in 1908 to 1,129,004,833 gallons ($75,988,256). Practically all of the leading European markets, through which the bulk of American illuminating oils is taken, were in less active touch with our supplies last year. Substantial losses were sustained in our trade relations with the United Kingdom, France, Germany, Belgium and the Netherlands. Japan was also a lessened consumer, but the Chinese Empire drew more freely upon this country. The most gratifying comparison in the export statistics of the last two years is found in those for the West Indies, Central and South America, satisfactory gains being noted at all points last year. As the more decisive selling tactics did not reach their more tangible development until the latter part of 1910, the year's statistics cannot be regarded as a fair criterion as to what part, if any, the radical reduction in prices have played in stimulating the foreign consumption of American illuminating oils."

Exports.

Cutting out the tables given showing the exports in gallons for 1908, 1909 and 1910, (all of which have been given in the Derrick month by month with comparisons for the year previous) the "Reporter gives in a few words and figures a splendid summary showing the value and amount of each product exported, which we quote herewith:

The total value of the petroleum export trade during 1910 fell materially below that of the previous year, and a more than proportionate decrease is noted in valuations. Government statistics record the aggregate of crude and refined products for 1910 as 1,502,491,933 gallons, valued at $94,107,022, representing an average of 6.263c per gallon. For the former year they amounted to 1,569,103,378 gallons ($103,838,590), an average of 6.618c per gallon. The conditions governing our relations with the foreign markets last year have been sufficiently treated in the general review of the petroleum situation to explain the adverse factors in the showing for 1910.

Gain in Crude Exports.

"There was a gain in 1910 exports of crude petroleum, including all natural oils, without regard to gravity, of 9,773,393 gallons, although there was a depreciation of $623,335 as compared with the value of the 1909 exports. The average value per gallon for 1910 was 3c, while that for the former year was 3.538c.

Illuminating Oils.

"The most material variation in the export statistics of the last two years is noted in those for illuminating oil. This is readily accounted for by the fact that the sharpness of competition between domestic and foreign refiners for the trade of the markets abroad has centered upon the illuminating product. Our exports of illuminating oil last year amounted to 940,247,039 gallons, valued at $55,642,368, an average of 5.918c per gallon, while for 1909 they were 1,046,401,072 gallons ($67,814,406), an average of 6.481c.

Napthas.

"The most favorable comparison in the export statistics is found in the relationship of the products of the naphtha classification for the last two years. There was a gain of 31,936,707 gallons during 1910, or 33 per cent over the previous total. The enhancement in valuation was $2,707,108. The average per gallon in 1910 was 8.389c, as against 8.406c in 1909. The increase in last year's exports is reflective of the broadening markets throughout the world for the products for motor consumption, frequently taxing supplies.

Lubricating Oils.

"In lubricating and heavy parafine oils there was a slight gain last year, comparative figures being 163,832,544 gallons ($20,921,-103) for 1910 and 161,639,609 gallons ($20,016,107) for 1909. The average per gallon for 1910 was 12.782c, as against 18.57c for 1909.

Residuum.

"There was a decline last year in exports of residuum, including tar and all other products from which the light bodies have been taken. The total for 1910 reached 117,605,802 gallons ($3,732,196) while that for the previous year reached 121,966,249 gallons ($4,-180,495). Averages per gallon were 3.427c in 1909 and 3.173c in 1910."

Total Exports of Crude and Products During Years 1908, 1909 and 1910.

The following table shows decrease in both quantity and value of crude and products during years above mentioned:

Field.	Barrels. 1908 Gallons.	Barrels. 1909 Gallons.	Barrels. 1910 Gallons.
January	107,322,016	125,048,003	100,607,894
February	116,140,370	91,719,956	122,897,466
March	122,363,300	139,433,675	120,475,800
April	118,900,738	141,999,696	124,145,014
May	140,940,632	117,477,777	139,645,121
June	135,950,594	140,207,288	121,664,396
July	150,661,620	126,868,782	123,070,272
August	137,039,268	127,384,137	142,209,938
September	144,481,214	156,441,251	127,982,115
October	143,221,807	133,499,602	126,617,253

November	104,530,658	139,028,685	128,949,683
December	125,830,184	117,652,880	120,809,255
Totals	1,547,405,401	1,569,103,378	1,502,491,933
Average	128,783,783	130,925,281	125,207,661
Total value	$108,815,455	$103,838,590	$94,107,022

Lubricating Oils.

The market for the lubricating products remained on a nominally steady basis so far as the recognized market brands are concerned during 1910, no change in the scheduled quotations being occasioned over the period. The depreciating course of most of the crude oils lent a suggestion that a similar development would characterize the market for the lubricants. It was maintained, however, that the easing of crude values was not of sufficient significance to affect the lubricants. Buyers were satisfied to operate well within the limits of current requirements over the year, as there was nothing to at any time to encourage forward buying. There was a slight gain in the export movement of the lubricating oils last year, advance government statistics recording the total as 163,832,544 gallons, valued at $20,921,103, while for 1909 they reached 161,639,609 gallons ($20,016,107) and for 1908 147,769,024 gallons ($18,971,436). The United Kingdom was the largest outlet last year, taking almost one-third of the total exports. Other important consuming countries were Germany, France, Belgium and the Netherlands, but they failed to draw upon American supplies to the same extent in 1910 as previously.

Reporter's Splendid Tribute to California.

The "Reporter" ran a splendid review of California conditions giving everything which could possibly be expected by the most exacting critic. Conditions were given as they actually exist and credit was given where it should go—to the Independents, the saviors of the California oil situation during the last year. The wonderful developments which have amazed the entire world, and which have been given both as they occurred and in the California Derrick's review in our January and February editions, were accorded full space in the "Reporter," and were told without exaggeration or prejudice. The management of the Reporter is to be congartulated upon the excellence of its California review, as well as upon the matter just presented to our readers.

FEBRUARY DIVIDENDS.

Dividends to the amount of $501,537.15 were paid by the active listed oil companies in California during February; total disbursements of dividends to date amount to $36,403,449.49. Following is the list of companies paying in February, and amount paid:

American Petroleum Company	$ 96,958.20
Caribou O. M. Co.	20,175.75
Central Oil Co.	12,500.00
Claremont	8,957.18
Columbia	9,992.30
Empire	2,000.00
Euclid	1,750.00
Home	2,000.00
Kern River	2,000.00
Mascot	20,000.00
Monte Cristo	25,000.00
New Pennsylvania Pet.	2,498.48
Palmer	18,020.10
Paraffine	3,000.00
Record	7,500.00
Section Twenty-Five	10,000.00
Silver Tip	18,000.00
Union	177,658.20
United Pet.	40,375.50
United Oil	18,151.44
Western Union	5,000.00
Total for Cal. oil companies, February, 1911	$501,537.15
Mexican Petroleum Co. of Cal.	$ 43,846.63
Mex. Pet., Ltd.	79,998.51
Grand total, all companies listed in Cal. for Feb.	$625,382.34
Grand total, all listed companies to date amounts to	$36,403,449.49

On or about April 10th, the San Francisco Stock Exchange will issue its first official quarterly dividend sheet.

SPLENDID ADDRESS.

M. L. Requa recently made an address before the students of the University of California on "The Oil Resources of California." which has been universally recognized by the oil press and public since its delivery, as one of the most interesting ever given about oil.

LADY WASHINGTON OIL COMPANY.

Well No. 1 has entered what is believed to be the main sand underlying the Sunset field; same was reached at a depth of 2890 feet after passing through 43 feet of brown shale thoroughly permeated with light oil. This is the largest body of this character ever encountered in the Sunset field. The well was immediately cemented, four tons of cement being forced into the hole, under heavy air pressure. Drilling through the cement began the latter part of last week. Everybody connected with the drilling of the well as well as many of the experienced operators of the Sunset field believe that a big well will be brought in. When work on cementing No. 1 was completed well No. 2 was attended to, with excellent success, the driller negotiating a difficult piece of work by passing through the parted casing, shortly after which a large body of oil was encountered and a strong gas pressure, resulting in a blowout, the oil spurting above the casing. This oil was encountered at a depth of about 2000 feet; not believed to be main sand and well will be continued down. It is hoped to get the "big" sands at a lesser depth than that reached by well No. 1. Two good wells are looked for here, and certainly are deserved.

Blowout in Lady Washington No. 2—Great Gas Pressure in No. 1.

As we go to press we receive the dispatch that a big blowout occurred in Lady Washington well No. 2, throwing a solid six-inch stream of oil twenty feet above the top of the casing, the flow continuing for more than an hour. It is proposed to shut off the water by cementing immediately and then carry the well down to the "big sands," when a "gusher" is expected.

The cement plug has been drilled through in well No. 1 and the well put to pumping without drilling into the sand itself, the management believing that with the great gas pressure the well will develop itself, without the danger of getting a flow too big to handle, which might result if the sand was penetrated for any great distance. There seems to be no question about the well developing into a big one.

American Oilfields Company (Doheney) has offered its stockholders the exclusive right to subscribe to an additional issue of $1,000,000 of bonds. Money will be used to prove up land not yet patented.

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AT REGULAR PRICES

ONE HUNDRED BOILERS, from 1 to 100 h. p.
IRON TANKS, for oil and air
DISTILLATE and STEAM ENGINES 1 to 100 h. p.
AIR COMPRESSORS, to 100 h. p.
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Several thousand feet of 5/8 and 3/4 cable good for pumping plants.
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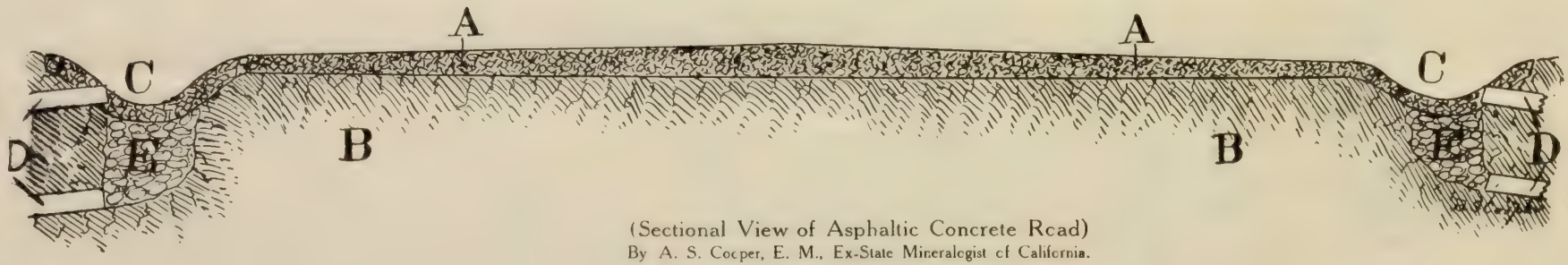
All sizes, weights and kinds used in the California Oil Fields, Special attention given to heavier weights for deeper territory.

ALL SIZES INTERCHANGEABLE WITH OTHER STANDARD MAKES



(Sectional View of Asphaltic Concrete Road)
By A. S. Cooper, E. M., Ex-State Mineralogist of California.

ASPHALTIC CONCRETE ROADS.

What California Oil and Asphalt Will Do for Highways.

By A. S. Cooper, E. M., Ex-State Mineralogist of California.

Eighteen millions of dollars have been voted by the people of California for roads! . . . It is generally conceded that the best and most durable streets and roads have an asphalt surface, which contention has been proved by the use of asphalt in nearly all the cities of the United States.

Thousands of tons of asphalt can be produced by our refineries. Deposits of natural rock asphalt and vast deposits of bitumined sand, amounting to millions of tons, exist in Santa Cruz, Monterey, San Luis Obispo and Santa Barbara counties, these deposits lying contiguous to the proposed *Camino Real*.

All of these asphaltic materials have been used in the cities of the United States for the surfacing of streets which have been subjected to heavy traffic; traffic far heavier than the *Camino Real* will ever receive. These pavements have proved satisfactory and durable and with the vast amount of asphalts in our State the roads should be constructed of these materials.

The best way to make an object plain is to visualize it; not by word painting, but by actual charting or illustration, by photograping or drawing. This is vizualizing worthy the name. Note the accompanying illustration, Figure 1, showing a cross section of a road made of asphalted concrete. The following fully explains the figure:

BB—Well consolidated earth.
CC—Surface drains.
EE—Sub-drains.
DD—Drain pipes.
AA—Asphaltic concrete.

Value of An Impervious Cover.

The asphaltic concrete forms a monolithic impervious blanket, or cover, over the surface of the road foundation, keeping it dry, whereas a road made of broken rock only will permit the entrance of rain water which will soften the foundation.

Well consolidated earth will make a good foundation for an asphaltic concrete road, as no water can enter the foundation through the concrete.

Advantage of a Smooth Road to Automobiles.

Automobile tires will not be injured by the sharp points of projecting rocks when a road receives the asphaltic covering, as will occur on roads made of broken stones which are uncemented. When a rock projects from the surface of an asphaltic concrete road the weight of the vehicles or of a roller passing over will permanently embed it by pressing it into the slightly plastic mass.

Another advantage of this road is that an automobile tire will not lift its surface by suction as it *does* with a macadam road. The rocks of the asphaltic road are cemented together by the asphaltum.

No Dust.

The pleasure derived from a dustless road is almost impossible to exaggerate. It needs no elaboration. No dust is ground off the surface of an asphaltic concrete road by the wheels of vehicles or the hoofs of animals. But on the surface of a broken rock road there is always some dust ground off the rocks, which, when it rains, becomes a thin film of mud.

Different Conditions Demand Different Treatment.

There are a number of engineers in California who understand practically the working of asphaltum and bituminous rocks and who thoroughly understand California conditions. It will certainly, therefore, be unnecessary to "go East" for an engineer to construct California roads; an engineer who has only a theoretical knowledge of the use of asphaltum and bituminous rock. In fact, road construction in California should not be on the same basis as in the East.

We have no snow in California and there are no upheavals by frost and consequently a road foundation need not be designed to resist its action. And we have the finest asphalt material scattered throughout the State, which is entirely lacking in the East. Conditions which are so opposite in their nature require different treatment and those capable of giving the best service in construction of our asphaltic concrete roads are necessarily those who have had most experience in making them.

CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 3 | San Francisco, Cal., April, 1911 | No. 11

A Continuous Topping Plant

By PAUL W. PRUTZMAN,
of the California State Mining Bureau

Geologist, Chemist and Author

(Author's foreword: Following is from a bulletin on "Water in Crude Oil," in preparation by the State Mining Bureau, and shortly to be issued.)

The continuous set of which a description follows, is designed for use in those situations where fuel is an item of expense, as it always is where there is not an excess of natural gas. By the use of this method, a large part of the fuel ordinarily required may be saved, the capacity of plant increased, and other advantages gained.

Continuous regenerative methods have some material advantages, aside from saving of fuel, and while the apparatus is somewhat more costly to erect than the simpler water condensing plant, the gain in capacity alone will more than offset the added first cost. Add to this the elimination of condensing water, the ease of regulation, and a high degree of regularity in quality of the output, and we have a list of advantages which well warrant investigation by anyone considering a plant for this purpose.

It should be said that these remarks describe no now invention, but merely an application not now in use, to any great extent, of well known principles and appliances. The art of distillation is so old, and so widely practiced, that it is difficult indeed to devise any method which has not already been put to use in some branch of this work.

The principles distinguishing this plant from the distillation plants ordinarily used are, first, that the supply of crude oil to the still is continuous, water and distillate passing constantly from the condenser, and reduced oil from the cooler; second, that the incoming oil is used to condense the distillate and to cool the residue, and is thus heated nearly or quite to boiling temperature. Crowding of still fires is thus avoided, and the life of this part of the set greatly prolonged.

The action of this plant is as follows. The oil boiling in the still gives off vapors of water and gasoline, which pass through the vapor line to the end chamber of the condenser, and thence through the tubes. As these are kept cool by the crude oil flowing around them, the vapors are chilled and condensed, and flow thence to the distillate tank. Because of the large amount of cold crude passing through the jacket, the distillate is thoroughly cooled, and loss avoided.

At the same time that distillate is leaving the still through the vapor line, reduced oil is being drawn from the bottom of the still. The hot oil flows into one end of the cooler, passes through tubes surrounded by crude oil (already warmed in the condenser jacket) and is cooled to a sufficiently low temperature to permit its being run into the residue tank. At the same time the crude oil is heated to a temperature considerably above that of the cooled residue, as the two flow in opposite directions. In most cases the crude will begin to boil in the cooler, and will pass to the still in the form of a column of vapor carrying blubs of oil, a fact to be borne in mind in arranging pipe connections.

The hot crude from the residue cooler now passes to the still, but before entering the main body of oil is sent through a long radiator coil (immersed in the oil) from which it finally issues through perforations in the last joint. This coil has a heating surface considerably larger than that of the still, and in it the oil is heated to full still temperature, so that distillation is finished in the coil, and what issues from the perforations is not crude oil, but a mixture of reduced oil and vapor of distillate.

So that in this process the still acts merely as a reservoir, holding a considerable body of oil at a constant temperature, and separating the liquid residue from the vaporized distillate. The residue in the body of still is at all times completely exhausted of distillate, and can thus be drawn without danger of the flash point being too high, and so long as a proper balance is maintained between oil feed and still fire, the products discharged both above and below will be of constant quality.

The desired relation between gravity of distillate and gravity of residue is maintained by means of the fire and the feed. For any given rate of feed, the stronger the fire, the heavier will be the residue—i. e., the greater will be the percentage of tops. And conversely, for any given rate of firing, the greater the feed the lighter will be the residue, and the smaller the percentage of tops. This offers a double means of regulation, though in practice the feed will usually be kept constant, and the fires manipulated to suit. It is evident that both feed and fire may be increased, in a certain ratio, without altering the results, up to the capacity of the still as a separator, that is, up to the point where the violent issue of vapor from the perforated pipe carries oil spray into the vapor line, and this colors the distillate. This point will depend largely on the proportion of water in the crude.

For any one oil, a given percentage of distillate will correspond with a constant still temperature, and thus we are provided with a simple means of following the regulation without constant reference to gravities of distillate and residue. As a temperature difference of 10 degrees Fahrenheit on the still represents a change of but a fraction of a degree Beaume in the gravity of the residue, a very moderate amount of care on the part of fireman should suffice for close regulation, so long as the quality of the crude does not vary.

Before entering into details as to the operation of this plant, and the results to be obtained with it, I will give a brief description of the construction and arrangement.

Site.

In choosing a site for a plant of this character, a side-hill location should be chosen, if possible, as pumping may thus be entirely done away with. The difference in levels necessary is indicated in Figure 187, from which you will note that the minimum difference allowable is 19½ feet. This amount may often be found in comparatively level country, as of course the various parts of the plant would not be jammed together, as shown in the figures, but separated as widely as desired. In no case should the still be closer to crude tank than two hundred feet, and a much greater distance is desirable, while the distillate tanks should be even farther from the still. Cooler and condenser should be close to still, to avoid piping difficulties, but these pieces are light, and readily supported on concrete H blocks, or even on wooden trestles, if economy is in order. If possible, the site should be so arranged that oil suddenly discharged by breakage at any point would drain away from the plant. At any rate, the greatest care must be taken that lost oil cannot drain into still or boiler fires—this can be taken care of by ditching, if the lay of the ground does not favor.

Construction.

Specifications and drawings are given herewith, for still, cooler and condenser. These are self explanatory, but the following notes may be added. It should be understood that only the best materials and workmanship are permissible in a plant of this form, and that where extreme economy in construction is desired, a simpler form should be adopted.

Still Equipment.

In addition to fittings specified, the following are added after still is set.

A reliable pyrometer or thermometer, reading to 600 Fahr. The high temperature mercury thermometer is much more satisfactory in use than the old style brass and iron expansion pyrometer. Put it in a readily observed position, and keep it clean.

The test column shown should be provided with stopcocks, above and below (S and T, Fig. 180), which should be of some form the closing of which can be relied on. The all iron packed ammonia cock (Crane 312) is recommended. The small brass gauge cocks are fragile, and breakage back of the lever is likely to cause a bad fire, if means of closing off column are not provided. A gauge glass is a great improvement on test column, but if used, the closing off cocks must be provided with coupled arms, so weighted that they cannot be left in the open position, but must be held up when the glass is being read. No attendant can be relied on to always close gauge glass cocks, and to leave them open is tempting fate.

Flange O (No. 180) is connected to a sump tank, for drawing down still preparatory to cleaning. As this pipe and the bottom of the sleeve above it are likely to choke, a steam line should be provided for clearing to and from still.

The coils C (180 and 181) are of 2 inch black pipe, set up with close form return bends, right and left. This work need not be very tight, and no cement should be used on threads. These coils lie flat on the bottom, except for the cross-overs, and the perforated length F, which rests at its ends only. The perforations in F are small, but the size and number will be governed by the quality of the oil, and the depth of the topping cut. Roughly fifty or sixty 3-16 inch perforations will answer —these should all be on one side of the pipe, on two longtitudinal lines say 3-4 inch part, and the pipe should be so set up that these perforations will point down and forward, that is, to about the front bottom corner of the shell.

Any good burner will answer, and a simple pipe burner is probably as good as any. Hot oil may be taken directly from residue pipe, before going to cooler, and this will make it easy to carry a clean fire. The fire should be flat, and as short as possible for the amount of fuel consumed, should be kept close to the floor of the fire-box, and draft choked down just to the smoking point. With this form of apparatus, crowding of still fire is not necessary, and the aim in settting burner should be to hold the fire gases as long as possible in contact with the still bottom, for the sake of fuel economy. The steam should be dried before entering burner, by a small coil in the front of the fire-box. This should be so set as not to get too hot, as steam for burners must be regulated between coil and burner, and coil will therefore carry boiler pressure.

Settings.

The design of still setting shown may seem rather radical but I have tried it under heavy work, and can entirely recommend it, for small stills at least. It is much stiffer than brick, if anything more durable, and usually materially cheaper. In use, a scale of softened cement (a sort of fluff) forms on the hot spots, but does not fall off, and seems to protect the body of setting from further burning. A setting of this size and shape, but slightly thinner, was used over two years in running to asphalt, a much harder service than this because of the high and intermittent heats carried, and at the end of this time was in practically perfect condition. This setting had no lining whatever, the fire striking directly against the concrete, and I do not consider lining necessary in the least under such conditions as are met in continuous topping.

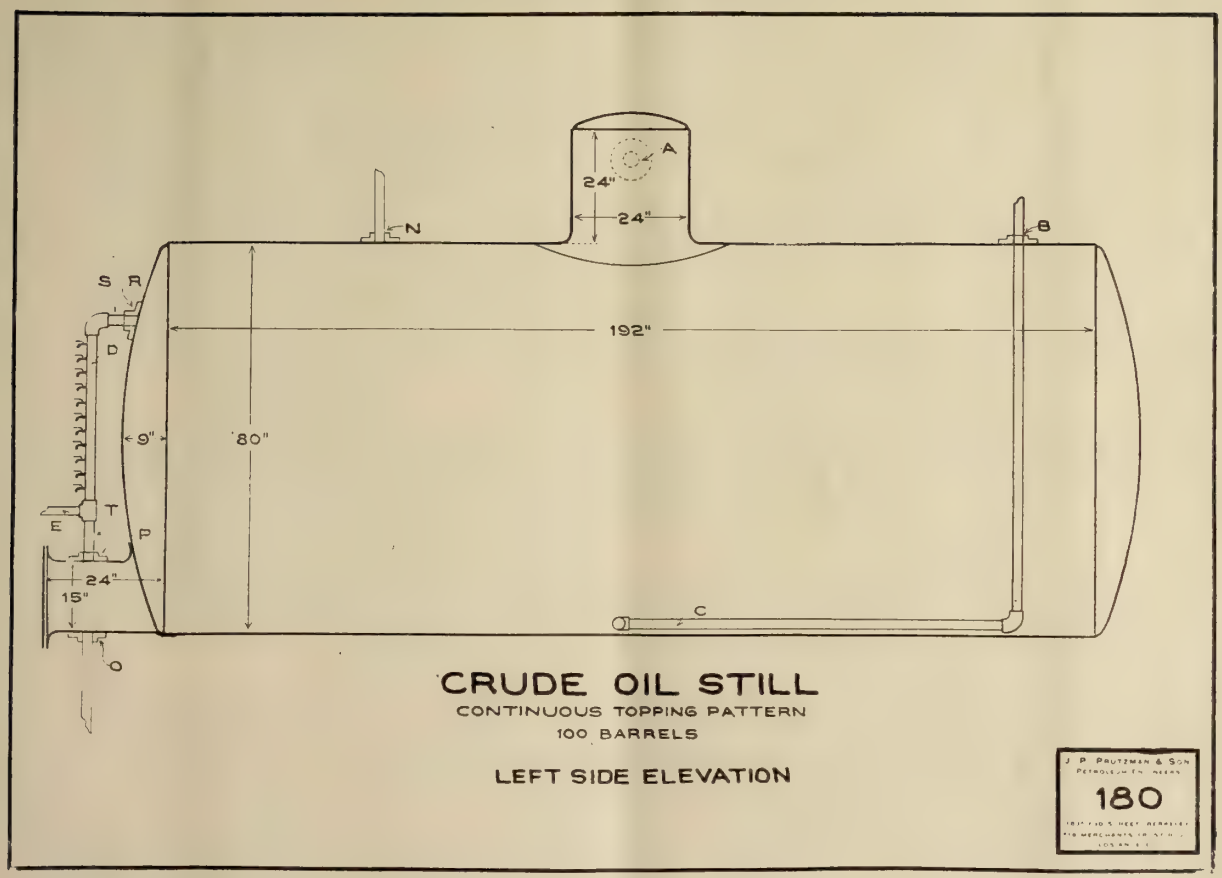
With this type of setting it is necessary to keep the lugs away from the concrete, and the railroad iron under lugs should never be omitted. This does away with any necessity for roller plates, in fact they are better omitted. The proper fall for still, about one inch in its length, should be allowed for in placing these irons.

After still is set, it should be thoroughly and heavily covered with magnesia asbestos or infusorial earth.

Cooler and condenser are fully shown in sketches, but the dimensions of supports will vary with the lay of the ground. A simple concrete pier, or better a pier of H section, is the best support, as it is desirable that there should be no weave between these pieces and the still, to loosen pipe joints. Carrying hot oil under some pressure, it will be difficult to keep these joints tight if any movement takes place.

Piping.

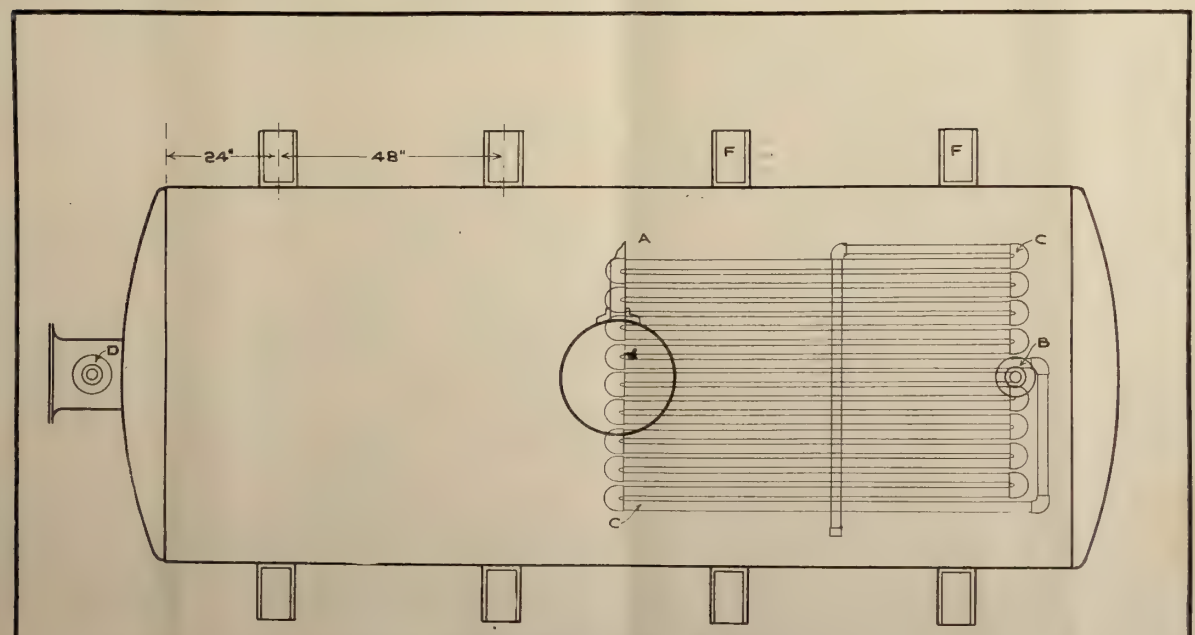
As all pipes except distillate discharge carry oil under pressure, levels are not material, and convenience may be the guide



CRUDE OIL STILL
CONTINUOUS TOPPING PATTERN
100 BARRELS

LEFT SIDE ELEVATION

J. P. Pautzman & Son
Petroleum Engineers
180
1811 Fifth Street, Berkeley
710 Merchants Trust Bldg.
Los Angeles



CRUDE OIL STILL
CONTINUOUS TOPPING PATTERN
100 BARRELS

PLAN

J. P. Pautzman & Son
Petroleum Engineers
181
1808 Fifth Street, Berkeley
710 Merchants Trust Bldg.
Los Angeles

in laying them out. If however, any inverted siphons are included, these should have a bleeder at the highest point, to take care of gas traps, and should be avoided as far as possible. Do not try to siphon the distillate, but give it a free fall from condenser to tank, as if it contains any water it will not flow without considerable difference in levels, and even then only intermittently, throwing some back pressure on still, and consequently disturbing the feed.

Pipe for these connections may be ordinary black pipe, but fittings should be heavy, so as to stand cinching up tight, and plenty of flange unions should be introduced, for convenience in making repairs.

All pipes carrying hot oil should be thoroughly insulated to retain heat, and if buried must be protected from water. Distillate and residue discharges to tanks should not be jacketed.

Feed regulating valve should be a packed cock, and must be put in a convenient location between crude tank and condenser. Regulation of hot oil is quite out of the question, because of alternations of gas and oil which would make the feed very irregular.

Safety Stop.

Where gravity feed is used, a safety stop must be provided between crude tank and condenser, independent of regulating cock. This should be a quick opening gate (Crane 470), placed on end or inverted (it will choke and refuse to close if placed in its natural position), and so weighted as to close automatically when a trip is released. This trip should be connected to a light wire cable (telegraph cord) carried to the point where still-man spends most of his time, say across front of still, over distillate tank, to front of boilers. This inexpensive precaution may save great loss in case of breakage of an oil pipe, as the weight of oil in the crude tank is on these pipes at all times, and the class of oil which is used for topping generally flows very freely.

Operation.

In starting this set, the still is filled to the required height, depending on the quality of the oil, but usually about half the height of the still. Fire is then started, and distillate run off until samples of residue, on being cooled, show the proper gravity. Oil feed is now started, very slowly at first, and gravity of distillate tested at short intervals. This will rise rapidly when feed is started, but will soon steady down—if too high, fire is raised, if too low, feed is increased. Or gravity of residue may be tested and the same course followed. As soon as gravities of residue and distillate remain steady at the desired points, fire and feed are both increased very slowly, until distillate commences to run dark, or still bumps too hard, when both are slightly reduced. Getting a still into exact balance at the maximum running speed will take some time, several hours at the least, but once regulation is established, this requires no further attention, except to watch the pyrometer and check gravities at reasonable intervals, and a slight amount of supervision is sufficient for this. By introducing certain gravity recording instruments, to be described in a later paper, and keeping such conditions as steam, fuel and feed pressures constant, the operation becomes almost entirely automatic. It is highly desirable to have a large crude oil tank, and to keep this almost full at all times, as thus the feed pressure will be given, and the quality of the oil, if it changes at all, will do so gradually, and not suddenly throw the regulation off, as pumping into a small amount of oil might do.

The only regulation necessary on residue is to so set the outflow valve as to kep oil level in still at a reasonably constant height, in doing which allowance must be made for frothing in the still.

In rapid handling of a wet oil, the maximum speed would be gotten by keeping the still very nearly full of froth, and a certain amount of skill on the part of attendant is necessary to determine, from a gauge glass reading, how much oil is actually present in the still. Probably the best way to take care of this is to set overflow of residue pipe slightly below the desired oil level in still. The difference in level necessary to overcome friction in pipes will vary greatly with distance, and with temperature and viscosity of the oil, but if discharge terminates in a swing pipe, this may be found by experiment.

It goes without saying that no oil still should be, at any time, out of the immediate reach of someone whose duty it is to care for emergencies. Bottom of still must be examined every few hours for signs of overheating, due to deposits of sediment on bottom, and at the first signs of color, still should be at once shut down. Fires are stopped first, and feed continued until gravity of residue has risen say 1 degree Beaume when feed and outflow may both be closed.

Limitations.

This process will not work in just this form where oils carry large proportions of water, unless means are provided for separating water between condenser and cooler. A closed cylinder, set on end, as in Figure 188, will take care of a large proportion of water, and greatly increase the capacity of the set when running wet oils. A small proportion of water in the crude is, in this process, rather desirable than otherwise, in fact if oil were absolutely dry, it might be necessary to introduce a little steam into oil feed, immediately over still, to prevent burning in coils.

This process will not handle an oil containing much solid matter (sand or clay) without special precautions. A different form of condenser may, however, be arranged, which will remove the solids before reaching cooler. Any considerable amount of sediment, on reaching cooler jacket, would pack around tubes as oil heated, and soon choke. The introduction of steam through flange D (Figure 185) and draining at E into sump, will take care of such small amounts of solids as are deposited from a normally clean oil. Sediment taken into still will usually be carried out again, on account of the strong circulation there, but will have a tendency to accumulate in end chambers of cooler, which will therefore need to be blown out occasionally.

Running Capacity.

This depends so largely on conditions, that it is almost impossible to give figures. Normally it would be from 2½ to 3 times the capacity of the same still run in the usual manner (intermittently), using the same crude. Under favorable conditions, as where the proportion of tops is small, the comparative rate may be much larger.

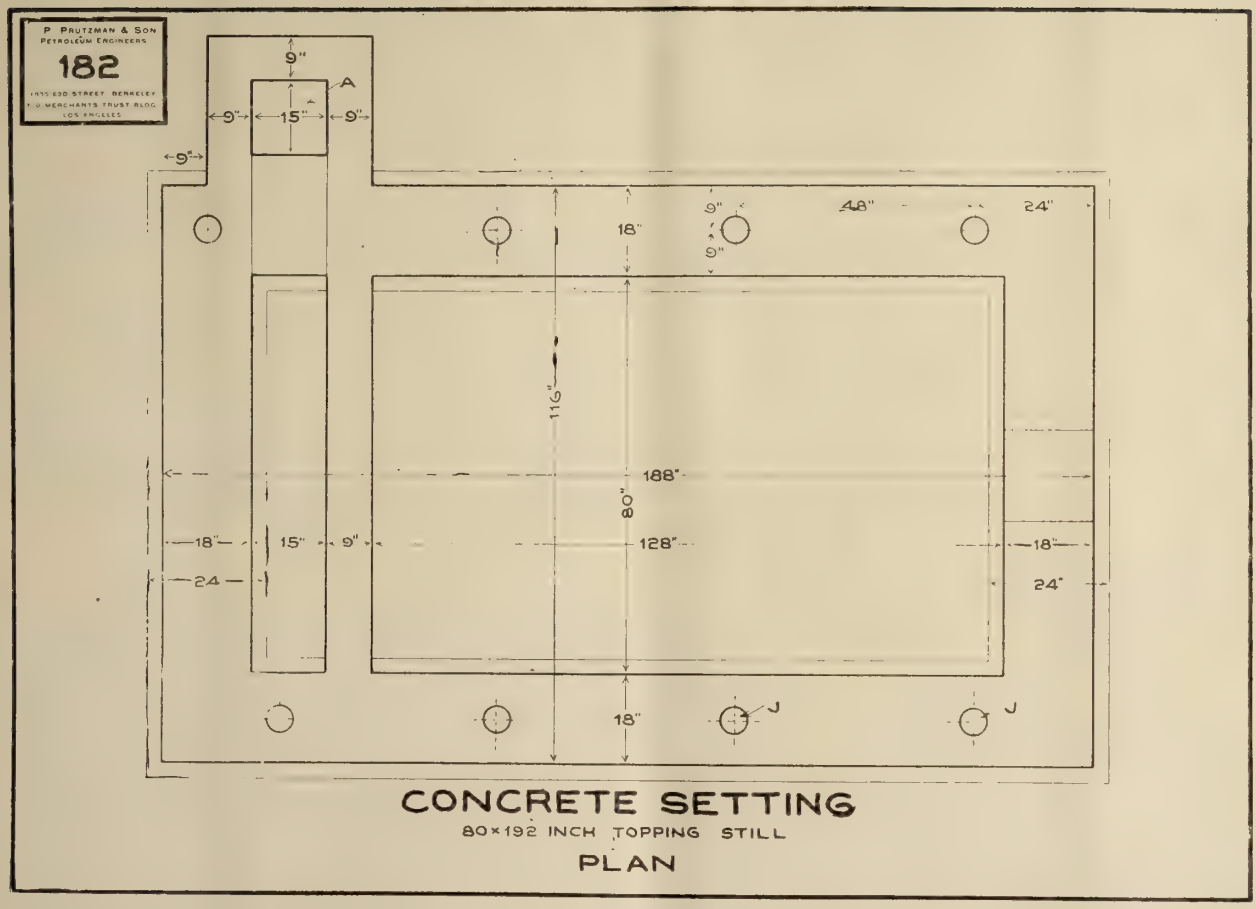
The daily capacity of such a set should thus be from four hundred to six hundred barrels of crude, with a possibility of greater output under favoring conditions.

Cost of Operation.

The daily cost would be the same as that of an intermittent plant of the same capacity, except as to fuel. But as capacity per day is larger, the cost per barrel would be less. A comparison of the two methods is given in figures below, for a typical case.

In these calculations it is necessary to assume a basis of conditions, and we will take an oil of 24 gravity, giving 20% tops of an average gravity of 47 degrees, 78% residue of 15 degree gravity, and 2% water. The figures given below are of course good only for these conditions, but the comparisons will be about correct for any ordinary case.

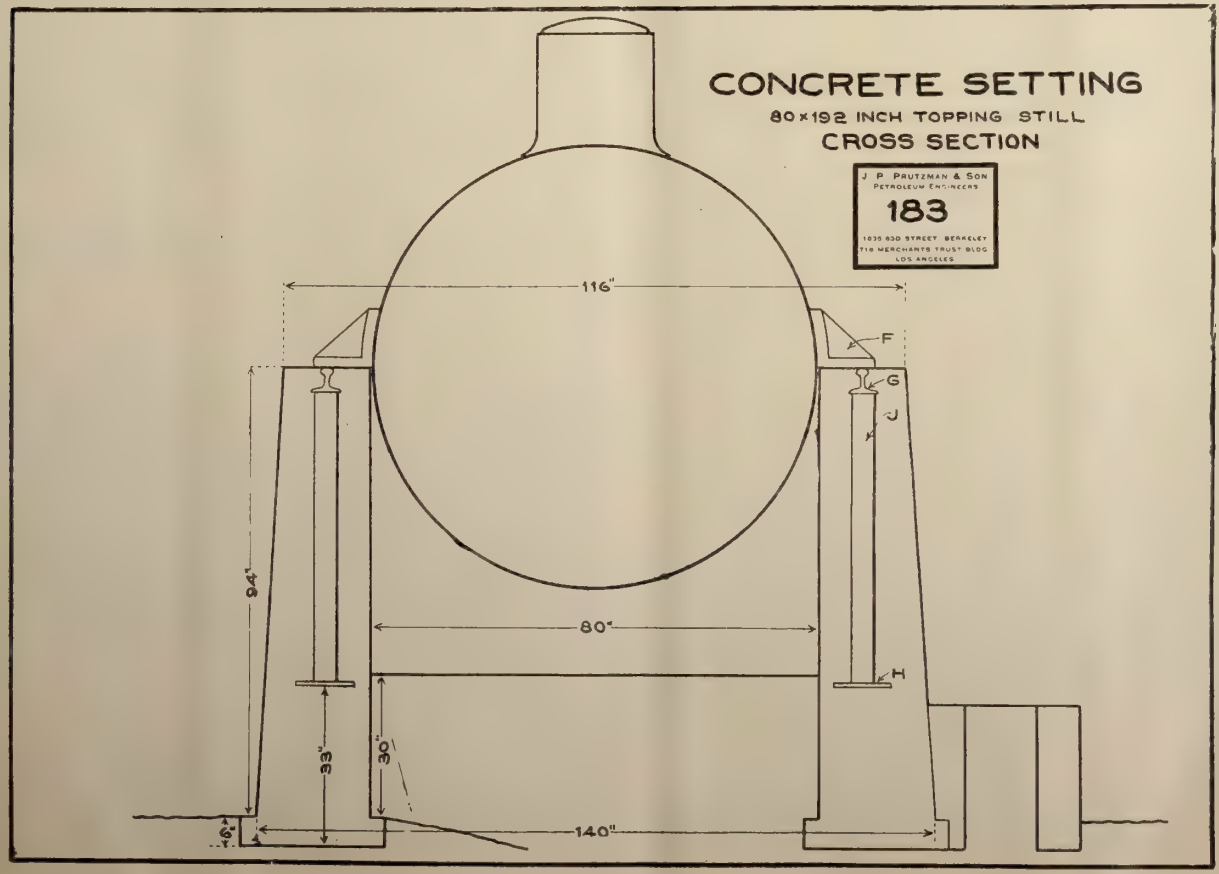
Continued in Next Issue.



CONCRETE SETTING

80×192 INCH TOPPING STILL

PLAN



PRODUCTION FOR FEBRUARY, 1911, IN DETAIL.

Following is our regular detailed monthly statement, giving field, wells producing, total production, consumption and stocks during and at the end of February, 1911:

	Wells producing.	Total Production.
Kern River	1,578	1,132,180
McKittrick	174	444,370
Midway	348	1,252,241
Sunset	148	377,636
Coalinga	762	1,376,249
Watsonville	3	1,960
Arroyo Grande	2	1,000
Lompoc	18	55,100
Santa Maria	145	562,077
Cat Canyon	134	5,110
Summerland	264	40,402
Santa Paula	76	11,270
Newhall	257	230,517
Puente	415	32,604
Los Angeles	140	85,581
Salt Lake	55	2,800
Whittier-Coyote	238	362,109
Fullerton-Brea Canyon	238	362,109
Total	4,757	5,972,206

	Barrels.
Stocks, January 31, 1911	32,877,485
Production, February, 1911	5,973,206
	38,850,691
Consumption, February, 1911	5,162,223
Stocks, February 28, 1911	33,688,468
Average daily production	213,329
Average daily consumption	184,365
Average daily surplus	28,964

FIELD OPERATIONS DURING FEBRUARY, 1911 IN DETAIL

Following are the field operations during February, as given out by the report of the Standard Oil Company:

	Rigs Comp.	Wells Drg.	Wells Comp.	Wells Abd.
Kern River	7	25	13	1
McKittrick	5	14	4	...
Midway	52	216	16	2
Sunset	12	55	2	....
Coalinga	11	131	14	2
Watsonville	....	2	...	....
Arroyo Grande	....	2	....	1
Lompoc	....	3	....	....
Santa Maria	1	38	1	....
Summerland	....	1	..	....
Santa Paula	1	35	3	...
Newhall	....	4	...	....
Salt Lake	1	10	4	2
Los Angeles	....	....	....	1
Whittier-Coyote	....	18	....	1
Puente	....	1	.	....
Fullerton-Brea Canyon	2	44	3	...
Salina Valley	....	2	..	....
Repetto	....	1	.	...
Totals	92	602	60	10

In all fields in the State above given, during February, sixty-two wells were being deepened, three hundred and forty drilling wells were suspended, six hundred and sixty-seven were shut in and 430,453 barrels of oil was used as fuel for drilling.

AGENCY SALES IN FEBRUARY.

The Independent's February sales amounted to approximately 957,000 barrels. This is said to be an increase over January sales of 244,000 barrels. The price continues to average 35 cents per barrel. The new business is the result of the Associated-Agenecy agreement.

BIG SHIPMENTS OF UNION OIL COMPANY.

Deep-sea shipments of the Union Oil Company during the month of February, were as follows:

From Sau Luis Obispo, 260,000 barrels; from San Pedro, 39,000 barrels; from Ventura, 18,000 barrels; Producers' Transportation Co., through the Union, shipped 240,000 barrels, via San Luis, making a total of 557,000 barrels.

EARLY MARCH PRODUCTION FIGURES.

According to early statistics there was a large increase over the February production during March. The *California Oil World* says that 6,341,603 barrels is the amount produced last month, an increase in the daily production of approximately 12,000 barrels, the greatest increase being noted in Midway, where the gushers brought the daily average up to 52,692 barrels. The other San Joaquin Valley fields also increased their output excepting only McKittrick, where a decline was noted. Salt Lake-Sherman and Whittier dcreased; Fullerton increased almost 3000 barrels in the daily production. Final figures will be given in the May number of this magazine.

EXPORTS.

During the month of February 5,406,835 gallons of crude, napthas, illuminating, lubricating and paraffine and residual oils, valued at $144,855, was exported from San Francisco.

DR. C. HOWARD MERRITT, OF HAIWEE PACIFIC OIL COMPANY, CONVICTED.

Dr. C. Howard Merritt, formerly secretary of the Haiwee Pacific Oil Company of Inyo County, was convicted in Oakland, California, of circulating a false prospectus for the purpose of selling worthless oil stock, according to a bulletin just received in this office from the State Mining Bureau. Dr. Merritt was prosecuted at the instance of Lewis E. Aubury, State Mineralogist, who produced evidence tending to show that Merritt had been guilty of misrepresentation in many ways, notably in saying that his company was the owner of some 6080 acres of proven oil lands, which was shown to be an untruth. Merritt was sentenced to spend six months' imprisonment in the Alameda County Jail and to pay a fine of $1000 by Judge Brown of the Superior Court, before whom the case was tried. Judge Brown publicly praised Aubury for bringing the suit, saying that it would have a very beneficial effect upon the industry, as it would keep "fakirs" from trying to sell worthelss stock to the public. We understand that an appeal will be taken.

WISNERS OF NEW YORK IN TOILS.

Wisner & Company and the Standard Securities Company of New York, were recently "raided" at their New York offices and A. and E. Wisner, owners of both concerns, also Grover Trumbull, chief clerk, were arrested for swindling. The

specific charge lodged against the outfit was using the United States mails for purposes to defraud by selling worthless stocks, they having represented the California Diamond Oil Company as an active corporation, when as a matter of fact they lost title to the property claimed to be operating, as long ago as 1908. A long list of the alleged worthless properties in which the company dealt was also given. Among these were the following: Thirty-three Consolidated Oil Company, Mutual Oil Company, Sycamore Oil Company, Eureka Oil & Gas Company, California & New York Oil Company Consolidated, California Monarch Oil Company, Amelgamated Mining & Oil Company, and, the before-mentioned Diamond Oil Company. The case, it is expected, will come up shortly. The prisoners were lodged in the "Tombs," but we learn by press dispatches that they are now out on bail. John J. Meyer, a prominent mining engineer of San Francisco, was also arrested, but disclaimed any connection with the companies. He was released on $2000 bonds. It is thought he will be able to prove having severed what little connection he ever had with the companies as long as two years ago.

SUIT MUST CONTINUE.

The suit of the Chanslor & Canfield Oil Company vs. the Associated Oil Company, in which the former asks damages of $600,000, came up before Judge Hutton of the Superior Court, in Los Angeles, who decided that it must go to trial. The trouble between the two companies is of long standing, the case involving oil contracts dating back to 1900 when Canfield and Doheney agreed to supply oil to the Santa Fe Railroad for use between Needles and Mojave. The firm which changed to Canfield & Chanslor later on, entered into a contract with the Associated Oil Company to have the latter corporation supply them with sufficient oil to fill the contracts, at prices ranging from 22½c to 50c per barrel. The railroads, at the end of seven years, failed to renew their option for the remaining three years, and Chanslor & Canfield allege that said failure was due to the importuning of the Associated Oil Company, in violation of their contract with the Associated, and that it occasioned them a loss of the amount for which suit was instituted. The Associated claims that no clause in their contract with Canfield & Canslor referred to their "importuning," but the Judge decided that by "necessary implication the defendant obligated itself not to interfere with the railroad companies to induce them to refuse to exercise their option given by the contract."

AMALGAMATED'S STRIKE

The most important oil strike in some time is that made by the Amalgamated Oil Company, a subsidiary of the Associated Oil Company, in its well in the La Habra Valley, on Section 1, 3-10, about three miles across the valley from the old Fullerton field, and in line with developments in the Coyote Hills. The well was finished at a depth of 3360 feet and is now producing at the rate of 700 barrels of oil daily. The strike proves that the oil formation extends from the Puente Hills to the Coyote Hills. Most of the land in this region is controlled by the Union, Amalgamated and Graham and Loftus oil companies, and it is stated that the latter company will at once start five strings of tools. A correspondent, who has seen the well and all the country thereabouts, writes the following:

"Oil men who have been watching developments state that every indication points to an immense oil-bearing area, extending practically from the Whittier field along the Puente range through Brae Canyon to Olinda, a distance of fifteen miles, and out into the La Habra Valley for from two to three miles."

We understand that the Amalgamated has already started to grade for two new rigs near its new well. Brae Canyon, Olinda is the scene of another strike, made by the Menges Oil Company, which got a well now said to be producing 1000 barrels of 31 gravity oil per day, under restraint. It is thought that it will produce as high as 3000 barrels a day.

A NEWLY PATENTED PERFORATED OIL WELL CASING.

Realizing the great outlay of money and the time involved by the use of the present-day inadequate oil well casings, and the demand for a better article, Mr. Andrew Smith, of San Mateo, determined some time since to produce a casing from which the objectionable features would be eliminated. After several ineffectual attempts the inventor hit upon a decidedly novel and efficacious method of doing away with the "old-time casing difficulties." The trouble with the present casings, Mr. Smith avers, is that in order to possess strength they have to possess thickness, and possessing thickness the perforations must be correspondingly larger; furthermore, they are made so roughly that they are ragged and easily clogged with rust and dirt.

By Mr. Smith's process the first difficulty is entirely removed as he can make perforations in half-inch casing as narrow as 1-1000th of an inch and of corresponding width in different thickness of casing. Furthermore, Smith's invention does away with all obstructions to driving the casing, as all seams are welded. The perforations are regular and smooth and are galvanized, allowing of no rust.

The method of construction of this casing is as follows:

Alternating sections of sheet steel, of any thickness desired, are depressed in opposite directions by sharp dies. The roughened portion may then be cut again, or the un-cut portion rolled, causing a stretching of the steel and consequent opening of perforation-slits to desired width. This method, says Mr. Smith, has greater efficiency than the old, combining strength with increased straining capacity; if the casing becomes clogged it may be cleaned by simply inserting a pneumatic hammer to dislodge the obstructions. Mr. Smith thinks that his casing will undoubtedly be used almost exclusively in the future. An excellent description of his patented process is given in the March number of the "*Iron Age*." It is well worth investigation.

Mr. Smith makes a number of points in favor of his casing; we give same as they seem to be very important to Midway and other gusher-district operators, who have been compelled to use a strainer and who, if the casing is all it is claimed to be, will be able to dispense with it. Following are specific advantages of the new perforated casing as put forth by Mr. Smith:

"This casing is the only well casing, that uses the walls of the casing as a strainer. If the metal casing is 1-2 inch thick, 'V' slots can be perforated 1-1000 of an inch wide if desired. The advantage of using 'V' sloted perforated casing in the construction of oil wells is inestimable. When the oil sands are struck, the gas and oil at once enters the perforations, thereby relieving the pressure and preventing the oil sands from heaving up in the casing. When the perforated casing has been put down the required depth, the well casing itself acts as a strainer, and will drain the last drop of oil from the sands. This casing will stop forever the great expense caused by 'sanding up.' In California alone there are thousands of non-producing wells which could be made to produce oil at a profit were Smith's Patent Perforated Casing used.

"No pulling the casing to perforate.

"No inserting the uncertain perforating tool.

"No strainer to lower in the well.

"No bailing the earth for weeks."

Sounds too good to be real, doesn't it? Nevertheless, it *IS* real.

CALIFORNIA CONSOLIDATED ACQUIRES MEXICAN LANDS—READJUSTMENT OF COMPANY'S AFFAIRS EFFECTED.

At a meeting of a majority of the directors of the California Consolidated Oil Company, held in the company's offices on the ninth floor of the Metropolis Bank Building, San Francisco, on the 13th of the month, a number of changes were made in the management of the company. A new director, Mr. J. R. Riggins of Los Angeles, was elected to the board of directors, the acquisition of 1000 acres of oil lands in Mexico was made known, and the sale of 1,200,000 shares of the stock was taken under advisement.

Henry Wellington Wack, of New York City, special counsel for the company, formerly counsel to the King of Belgium and personal counsel for Admiral R. D. Evans, was present at the meeting, and it was to consider and ratify the action taken by him that the meeting was held. It was through Mr. Wack that 1000 acres of Mexican oil lands, a part of the La Costa holdings of Spellacy and Thompson, who are now developing the Mexican Premier properties near Tampico, Mexico, were acquired for the California Consolidated Oil Company. Mr. Wack gave out the information that the new tract of land is most favorably located, being close to the Doheney-Canfield, to British and California properties, all of which are undergoing development. Mr. Wack has been in California several weeks, going over the company's affairs, and has been instrumental in effecting economics which will mean a material saving. Further than this, he has arranged the company's payments for the Mascot property in such a manner as to insure the former's shareholders against any temporary default.

The best news which the stockholders could receive, however, at the present time, is the desire on the part of Belgium and Frnch interests to acquire 1,200,000 shares of the company's stock. All arrangements were concluded at the recent directors' meeting empowering the company's counsel to journey to France and complete the deal. The transaction has been formally closed by cable. The share warrants of the company will be listed on the French and Belgium bourse, and further than this, the company will maintain a new set of offices, to be located in Los Angeles, besides those in New York City and San Francisco. The company is progressing in the very best possible manner.

PATENTS RECENTLY GRANTED.

The following recently granted patents of interest to the oil trade are reported expressly for **The California Derrick** by J. M. Nesbit, patent attorney, Park building, Pittsburgh, Pa., from whom printed copies may be procured for 15 cents each:

Well Casing Spear—J. B. Norris, Corsicana, Tex., 985,197.

Tubing Spear—William Lang, Germantownship, Allen County, Ohio, 985,263.

Fishing Tool—P. E. Lower, St. Francisville, Ill., 985,817.

Thread Protector for Tubing and Casing—P. J. Shrum, Monaca Pa., assignor to Colona Mfg. Co., Pittsburgh, Pa., 985,946.

Under-reamer—F. C. Voltz, Fullerton, Cal., 985,956.

Well Pulling and Cleaning Machine—O. D. Karft and L. W. Fetzer, Findlay, Ohio, 986,181.

Tubing and Casing Elevator—A. G. Heggem, Coraopolis, Pa., assignor to Oil Well Supply Co., Pittsburgh, 986,388.

Gas Meter Seal—John Graham, Swissvale, Pa., 986,818.

Separating and collecting particles of one liquid suspended in another liquid—(3) F. G. Cottrell and J. B. Speed, Berkeley, Cal., assignors to Petroleum Rectifying Company, San Francisco., Cal., 987,114, 987,115 and 987,116.

Lining Plunger for Oil Well Pumps—Daniel Daniels and L. P. Burgess, Los Angeles, Cal., 987,347.

Heaving Plug for Oil Wells—E. N. Moor, Oakland, Cal., 987,812.

Pipe Fishing Tool—Enoch Seibert, Didsbury, Alberta, Canada, 987,832.

Device for Pulling Pump Pipes—(2) P. E. Emanuel, Bennettsville, S. C., 988,761 and 988,762.

JEWELL OIL COMPANY.

Jewell Oil Company, Kern River Field: The company is making regular deliveries to the Agency. Also has a large amount of oil in storage and in sumps on property. A new superintendent, Mr. Geo. A. Betts, who acts in the same capacity for the Kern River properties of the Section Six, Madison and Yellwstone Oil Company properties, is now in charge of the Jewell. He is a successful and well known operator.

AMERICAN PETROLEUM TO DISCONTINUE MONTHLY DIVIDENDS FOR TIME.

The Board of Directors of the American Petroleum Company has decided to discontinue dividends for a period of probably three months at least and possibly longer than that. In a lengthy statement issued recently conditions were fully gone into showing why this action was taken. A circular was sent to the stockholders of the company showing that although the net earnings of the company amount to more than $30,000 in excess of the dividends, the company's expenses, which average $75,000 a month, are greater than the excess of net earnings over the dividends that have been paid. The sales of the company have been well maintained, averaging about 250,000 barrels, bringing in approximately $140,000 a month. The company is still making payments on lands purchased some time since, and its operating expenses amount to $75,000 monthly. Net earnings for the year are given as $1,560,000. Dividends paid since November, 1908, $2,500,000. Contracts for its oil for a period of five years to come have been entered into by the company at an average price of 58c per barrel.

TWO MORE OIL CARRIERS FOR PACIFIC.

Within a short time the Associated Oil Company's tank steamer, the W. F. Herrin, named after the president of the company, will arrive on the Pacific, according to a news dispatch, with a big cargo of napthas. The Standard Oil Company's five-masted steamer, Col. E. L. Drake, is also to be used on the Pacific in the near future.

BIG SAVING.

Walter Grant Hopkins, in the Mining Review, of Los Angeles, asserts that more than $100,000 per day is the sum saved to the Southern Pacific Company by the use of fuel oil in its locomotives. He further states that the danger of fires is eliminated; and gives an excellent table to prove the truth of his assertions.

WHITTIER NOTES.

The Murphy Oil Company, in the Whittier field, is drilling four wells at present. The Central Oil Company is running eight strings. The Central has inaugurated the use of electricity on its properties. Recent developments in Whittier have been retarded by the poor condition of the roads, which suffered much from the rains.

VENTURA OIL DEVELOPMENT COMPANY.

March shipments from the Newhall lease of the Ventura Oil Development Company were almost up to the average in spite of the delay in hauling during the early part of the month, caused by the poor condition of the roads after the heavy rains. There is a large amount of oil in storage on the lease; same will be disposed of as rapidly as possible. The drilling of well No. 3 at Piru, which was progressing nicely, has been somewhat delayed of late; the showing is very favorable, however, and a good well is anticipated.

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OIL LAND LEASING

Our correspondent (and friend) Mr. Guy H. Salisbury, has written us again and again about the "pernicious effect of the proposed leasing system." Mr. Salisbury has a dreadful fear that the leasing system will make it impossible for the "small man" to do anything in the line of developing new territory and acquiring for himself the emolument which always follows the successful proving of new oil lands. Mr. Salisbury says:

"The advocates of a leasing system for oil lands are generally men from states where oil is not produced. * * * * Very few men of the western oil states are in favor of any kind of a leasing system. The Conservationists, who have done nothing towards the general enrichment of the country by their individual efforts, wish to divide or absorb what we have labored to discover. We, as oil men, are not opposed to the proper regulation of the business as far as having proper safeguards against careless drilling and a waste of oil are concerned; we DO oppose the leasing of oil lands by the government. If the leasing theory is a tenable one, why not lease the cattle and sheep ranges, the agricultural and horticultural lands; the rivers and navigable waters; finally, why not lease the mining lands? What possible reason is there for a discrimination? Why apply this system alone to oil? * * * * The whole tendency of this system is to down the man with small capital as the small operator will stand little or no chance against the capitalist under the measures now proposed." Mr. Salisbury then proceeds to show the difference between times as they were and as they now are, and ends by a strong appeal to let the readers of the *Derrick* know what he thinks about the leasing system, saying: "The Canadian Government offers a premium to the man who makes a discovery, gives him a royalty for every barrel of oil he extracts from the earth and protects him in every possible manner. Compare this with the efforts of certain interests behind our government to take away what few privileges remain to the prospector and developer of our mineral lands and you will see why the small man's capital is seeking other fields for investment."

SALE OF THE ASSOCIATED OIL COMPANY.

What manner of sale is it which meets with general denial by both owners and supposed purchasers, and which yet receives credence on every hand? With a multiplicity of reasons assigned for the sale of California's greatest oil corporation, the Associated Oil Company and its affiliations, all of which reasons are cogent without being absolutely convincing, the San Francisco *Call* and *Chronicle* and practically every newspaper in the State of California have explained why the sale occurred and have given all the details without one official acknowledgement of it; with denial by all parties supposedly interested, and with the final seeming repudiation of the story by the re-election of the entire directorate of the company, with but a single minor exception, W. F. Herrin of the Southern Pacific Company being again installed as president of the Associated Oil Company for a period of one year. Whether or not this re-election is a matter of blinding the public, or serves to show that wherever the stocks have been purchased they have gone into friendly hands, is open to speculation; and speculation is by no means lacking over the details of a sale of such magnitude.

Shortly after the appearance of the last issue of this magazine the San Francisco *Chronicle*, which is a most careful and reliable purveyor of financial news, came out with the story of the sale of Associated to the Standard Oil Company. The information created a furore in oil circles and on the stock exchanges wherever Associated is listed, the stock going on the New York Exchange to $60.00 per share, a sheer rise of one-third over the normal selling price. To the intense astonishment of everybody interested in the matter the Standard Oil Company wrote a denial to the *Chronicle* requesting as much publicity for the denial as was given the first published report. In the meantime, all the oil papers came out "strong" on the sale without going to the trouble of looking into the matter. They had no sooner had time to make a denial than the San Francisco *Call* published the alleged details whereby the control of Associated had passed into the hands of the Rothschilds, to be turned over to the Shell interests in Great Britain, and we were shown how Standard Oil was being "tackled" right here at home, in America, by this great foreign company, which it had fought so bitterly abroad. It read excitingly, BUT— — — —

But: The annual meeting of the directors and stockholders of the Associated came around and out of the fray of the annual election W. F. Herrin and the old directorate emerged on top, with the before noted single exception. Furthermore—"William F. Herrin, president of the company, and O. Scribner, assistant general manager, both declined to discuss the reported sale further than to declare that if it has been made they have no knowledge of it further than the information that has been presented by The *Call*."—Is this an acknowledgment of the sale? We cannot see that it is. * * * * * To quote from the *Call* again: "On the other hand, one of the other directors said today that the Southern Pacific Company is compelled to dispose of its holdings in the Associated Oil Company in order to keep within the regulations of the inter-

CONSERVATION LEASING

WHO SAID ANYTHING ABOUT GOVERNMENT POLICIES?

state commerce commission, which prohibits a carrier from competing for the sale of product mined from the earth, which question was lately decided against the railroads in the coal cases of Pennsylvania. While admitting that negotiations for a sale are pending, this director could give no information as to the identity of the parties involved."

Further reasons assigned for the sale are the fact that the Southern Pacific is now in such a position that it no longer needs the Associated as a source of supply for its oil, because its enormous oil land holdings are sufficient to keep the company fully supplied with all the fuel necessary, which until recently has not been the case.

The New Directorate.

The officers and directors newly elected are William F. Herrin, president; W. S. Porter, general manager; O. Scribner, assistant general manager; R. P. Schwerin, Guy V. Shoup, J. A. Chanslor, Burton E. Green, Frank H. Buck, T. T. Dumgle and Rudolph Spreckles. Miss Grace Sheridan was re-elected secretary.

Meetings of the subsidiary companies of the Associated, the Amalgamated and Recruit oil companies were likewise held and the same officers and directors re-elected.

Net Profit For Year, $2,300,000.

The annual report of the condition of the company to be submitted to the stockholders at a future date shows that the company's net profits for the year, exclusive of $1,000,000 covering the figured depreciation and the amount applied to the sinking fund for bonded indebtedness, was $2,300,000.

The Southern Pacific Company controls 220,000 shares of the Associated, we understand, although the newspapers have placed it recently at from 240,000 to 300,000 shares. The capital stock of the Associated is 400,000 shares with a par value of $40,000,000. Bonds outstanding amount to $12,746,000. Seventy-five dollars per share is the reported amount of the purchase control price, making an outlay of $30,000,000, in case 300,000 shares were purchased, and with the assumption of the outstanding bonds an investment of $42,746,000; a tremendous investment.

That the Associated has been sold seems apparent, but to whom or for what price, beyond the facts or alleged facts herein given, we cannot state. Only one thing is evident at the present time and that is that if a sale has been made it has been made favorably to the Southern Pacific Company. What the importance of this alleged sale may be to the Independent Producers Agency, the Union Oil Company and the Standard Oil Company, needs no comment or elaboration. The sale, if it has occurred, is the most important and by all means the greatest event that has transpired in the annuals of recent oil history in California. Its future effect remains to be seen.

J. D. HENRY VISITS CALIFORNIA.

J. D. Henry, founder of the London *Petroleum World*, author of the volumes "Oil Fields of the Empire," "Oil Fuel," "Baku," and "Oil Transport," all of which have received wide and merited attention, has just visited the California oil fields, arriving in San Francisco from a round-the-world trip, after visiting various British Colonial oil fields. Mr. Henry called at the office of the *California Derrick* and told of a most interesting trip abroad. However, he was more interested in California oil than anything else when here, and expressed a desire to make a thorough tour of the various fields before leaving for the East and London. Mr. Henry's praise of California was by no means stinted, which is in line with the policy he has constantly maintained towards America. Said Mr. Henry to the editor:

"American wealth is the marvel of the age; especially the ewalth of your petroleum industry. I have always stood up for America's petroleums and have been particularly impressed with the oil business and the remarkable extent of the oil deposits in California. You may have noticed that I have been a constant friend of the American oil operator, and have encouraged the enlistment of capital in aid of your development, whenever I have seen a good opportunity for British interests to invest profitably."

Mr. Henry has undoubtedly exerted a kindly and powerful interest in favor of the American petroleum industry, in Great Britain. He has constantly supported the Standard Oil Company abroad, and has done much to overcome the opposition which has met that company in the foreign markets, thus aiding American exports to a very material degree. We regret to mention the fact, but are of the staunchest supporters of Standard Oil has been attacking Mr. Henry of late, instead of giving him the support which would seem to be merited after his efforts in favor of the mainstay of the American petroleum industry in foreign lands. It doesn't reflect much on American courtesy to have so distinguished an author and so kindly a friend constantly attacked for doing this country a favor. But whatsoever Mr. Henry may think of the matter just mentioned, he certainly cannot fail to carry away a good impression of California, and we feel certain that after he has "covered" the oil fields of this State, he will continue a strong supporter of California investments.

Patented oil land is now greatly in demand because of the restriction of cheap acquisition of lands from the Government, brought about by the policy of withdrawing same from entry.

SCIENTIFIC ARTICLES OF INTEREST TO THE OIL MAN. APPEARING IN CONTEMPORARY MAGAZINES AND NEWSPAPERS.

Following is an index to some of the interesting articles which have appeared recently in the *Journal of Electricity, Power and Gas*:

Locomotive Practice In Use of Fuel Oil, by Howard Stillman, a paper read before the San Francisco meeting of the American Society of Mechanical Engineers, last month. It is a most interesting and instructive paper. It tells all about the use of oil on the Southern Pacific Railroad and gives figures of great value. It will be continued.

A paper in the same magazine on "Oil Burning," very well illustrated, which ran through two issues and was concluded in the issue of April eighth, is also well worth any oil man's time. The why and wherefores are thoroughly entered into and every type of burner known, almost, is diagrammed and explained. For a practical exposition on the burner we have seen nothing better than this.

Still another paper of interest is one entitled, "Present and Future Supply of Petroleum As Fuel on the Pacific Coast," a work of much interest, the writer, A. F. L. Bell, tracing the oil production to date and deducting that amount from an estimated amount still obtainable, with a figured supply of fuel oil left of 17,194,000,000 barrels; which is "some oil."

"Relative Value of Light Oil As Compared With Heavy Oil," is the name of a paper by J. N. Le Conte, which is of exceeding interest. Other papers by well known authorities are: Comparative Evaporative Values of Coal and Oil, by C. F. Wieland; Furnace Arrangement for Using Oil as Fuel, by C. R. Weymouth; Practice As To Size of Stacks with Oil Fuel, by J. P. Dunn; Marine Use of Fuel Oil, by J. H. Hopps; and Atomization of Oil Fuel, by A. M. Hunt. On the whole, the meeting of the American Society of Mechanical Engineers furnished a number of excellent papers dealing with California oil, most of which were published in the before mentioned magazine.

An article on an invention enabling the bottoms of oil wells to be seen is described in the *Petroleum Review*, of London,

England, at some length. The article says that Prof. J. H. Rosing, who holds the Chair of Physics in the Nicholas I Institute of Technology, at St. Petersburg, Russia, is the inventor of an instrument which, used in connection with the recently discovered Cathode rays, makes it possible to see objects deep down in the earth, "under water or in any other place where it has previously been impossible for the human sight to penetrate." The invention is an electric telescope and is described at some length. It is thought that it will be of great practical value in investigating the source of trouble in the bottoms of oil wells.

RECENT INCORPORATIONS.

Following are a number of recently incorporated companies, which have filed papers with the Secretary of State:

Crafton Oil Company, Redlands; incorporated February 17; capital $25,000; directors, J. R. Baird, Jr., J. J. Suess, D. C. Lefferts, K. C. Wells, ohn W. Gill, Redlands, California.

Pasadena Prospect Oil & Development Company, Pasadena; incorporated February 17; capital $25,000; directors, John G. Bentz, A. C. Skinner, L. Bentz, Pasadena; E. Wilson, H. C. S. Aframs, Los Angeles, California.

Ranous Oil Company, Bakersfield; incorporated February 18; capital $50,000; directors, Floyd H. Barnett, E. F. Brittan, F. C. Rhodes, L. B. Ranous, J. R. Lunford, Bakersfield, California.

Wilcox Oil Company, San Francisco; incorporated February 21; capital $1,000,000; directors, Chas. G. Wilcox, H. A. Cooke, Frank W. Smith, R. E. Wallace, H. A. Mitchell, San Francisco, California.

Coalinga-Eureka Oil Company, Tacoma; incorporated February 21; capital $500,000; directors, H. R. Maybin, S. E. Tucker, H. N. DeWolf, Tacoma, Washington.

Lost Hills Development Company, Fresno; incorporated February 23; capital $25,000; directors, Dan Brown, A. G. Wishon, J. A. Ward, J. Q. Anderson, F. M. Miller, Fresno, California.

Section Three Oil Company, Madera; incorporated February 23; capital $150,000; directors, H. H. Riley, Coalinga; W. B. Thurman, G. S. Thurman, J. C. Harding, Madera; T. H. Thomson, Fresno, California.

H. H. Oil Company, San Francisco; incorporated February 20; capital $150,000; directors, W. G. Jeffress, Oakland; Clinton J. Hutchins, L. M. Hoefler, Leo Mund, San Francisco; Finlay Cook, San Mateo, California.

Kern Prosperity Oil Company, San Francisco; incorporated February 25; capital $1,000,000; directors, G. S. Johnson, J. B. Cottle, Fred G. Cox, A. J. Wright, H. O. Fairlie, San Francisco, California.

Sunol Coalinga Oil Company, San Francisco; incorporated February 25; capital, $500,000; directors, Robert Ellis, E. P. Christy, Mrs. E. M. Ritter, Mrs. Robert Ellis, Sunol; and H. H. Henshaw, Coalinga, California.

Pacific Southwest Oil Company, San Diego; incorporated February 26; capital, $1,000,000; directors, W. B. Ellis, E. G. Dehm, H. S. Culp, W. N. Smart, J. Frank Dehm, F. E. Wisecup, John H. Ferry, San Diego, California

California Well Drilling Company, Taft; incorporated February 28; capital $250,000; directors, James F. Ross, Elbert T. Edwards, W. L. McCormack, J. H. Ross, M. A. McCormack, Taft, California.

Midway Peerless Oil Company, Bakersfield; incorporated February 28; capital $600,000; directors, R. G. Smith, W. H. Morris, H. W. Thomas, F. N. Smith, W. B. Beizly, Bakersfield, California.

Union Oil Building Company, Los Angeles; incorporated, March 1; capital $1,000,000; directors, Lyman Stewart, Robert Watchorn, Edwin T. Earl, E. R. Frost, Los Angeles, California.

State Consolidated Oil Company, San Francisco; incorporated March 3; G. S. Arnold, Wm. E. Colby, Scott Hendricks, San Francisco; Robert M. Searles, Berkeley; Grant H. Smith, San Rafael, California.

Petroleum Rectifying Company of California, San Francisco; incorporated January 3; capital, $300,000; directors, Henry S. Howard, Balfour D. Adamson, Oakland; Allen C. Wright, Berkeley; J. R. Pringle, D. C. Norcross and R. F. MacLeod, San Francisco, California.

Satadena Petroleum Company, Bakersfield; incorporated January 3; capital, $75,000; directors, H. A. Rispin, A. B. Smith, San Francisco; N. B. Solomon, J. W. Kelly, J. F. Dorsey, Bakersfield.

Wyoming Oil Company, Pasadena; incorporated January 3; capital $1,000,000; directors, Lewis J. Merrit, A. A. Chubb, Albert F. Graf, G. W. Rosencranz, Pasadena; M. M. Gilchrist, Cheyenne, Wyo.; F. H. Hamilton, Fred E. Vincent, Los Angeles.

Buena Vista Consolidated Oil Company, San Francisco; incorporated anuary 3; capital $400,000; directors, Chas. Differing, Taft; J. C. Christensen, J. B. Havre, Berkeley; J. L. Emanuel, T. F. Pendergast, H. L. Melander, Bernard Silverstein, San Francisco.

Coalinga Lost Hills Oil Company, Coalinga; incorporated January 4; capital $50,000; directors, R. C. Baker, Chas. J. Crumpton, R. L. Peeler, S. J. Hardinson, Harold H. Maddren, all of Coalinga.

The California-Mexico Oil Company, Turlock; incorporated January 5; capital $1,000,000; directors, George Finnin, T. B. C. Taylor, William F. Cochrane, Turlock.

Investment Development Company, San Francisco; incorporated January 5; capital $100,000; directors, Albert Meyer, Samuel Pond, San Francisco; Ralston L. White, Mill Valley, Marin Co., Calif.

Bakersfield Six Oil Company, Bakersfield; incorporated January 6; capital, $10,000; directors Lesser Hirshfield, F. J. Sarnow, Martin Coyne, J. J. Hewitt, . Bloom, L. D. Hirshfield, Bakersfield.

CLAIMS HE CAN LOCATE OIL FORMATIONS.

Mr. Jonathan Beggs, an old time oil operator, has written us a letter which is, to say the least, of an unusual nature. Mr. Beggs claims to be able to locate underground formations; and, under the heading—for the letter received was in the nature of an article—"Can a Person Determine Underground Formations?" he writes as follows:

There are two phases to this problem, the positive and negative. I shall commence by giving the negative side of the question. About eighteen months ago I visited Boyle Heights when I saw people drilling near the cemetery. On examination I found they were off the oil field, but knowing they would not abandon the drilling, I told them to come to 104 South Broadway, Los Angeles, after they had gone down 500 feet, and they would learn all about their wealth. After going 580 feet, they called on Mr. Brown, at the above address, who opened an envelope which contained my prediction, and which read as follows: "If you continue drilling where you now are, you may strike oil when you reach China, but certainly not before, as you are several hundred yards off from the oil fields."

The upshot of it was that after going down 1200 feet and getting no oil they withdrew their derrick.

Last year at Palles Verdis, near Redondo Beach, parties interested got me to go over and examine their oil fields. I told them they would not get any oil where they were drilling, but they nevertheless continued boring, going down 1200 feet, when they moved their derrick.

At South Santa Paula I found parties drilling and they were down 800 feet and intended to go down 200 feet further. I left word with the stationer at Santa Paula that they would get no oil. After going down they found my predictions correct and moved their derrick. Last summer I came north to trace the connections between the Southern California oil fields and the Northern California oil fields. On my way to Santa Barbara on the summit of the Castitis Pass I found an oil company drilling, of which Ex-Governor Markham was a member. I found on examination that they were drilling a half mile off the oil and so reported to some farmers in the vicinity and Mr. Patten, a lumber merchant of Pasadena, that they would get no oil.

A month after my prediction they went down 1400 feet and withdrew their outfit—after getting nothing. In the vicinity of Santa Barbara I found six drilling rigs at work, and every one was off the oil fields entirely or was on the edge of the same. The Cocites Oil Company have moved one-half a mile north from where they were drilling and have struck a fine oil field at the point where I knew it existed.

As to the positive side of the question:

Last summer I examined the No. 1 well for the New Century Oil Company in Placerita Canyon in the Newhall district, and I told them they would get a very good well where they were going to drill well No. 1, and they got a gusher.

Mr. Evans, president of the Placerita Oil Company, engaged me to locate and examine oil lands for them, and also the Woman's Pacific Oil Company. George W. Morgan, 218 South Broadway, Los Angeles, and others can positively state that I can tell exactly all about the oils underlying the ground. In conclusion, I would state that there is now no necessity for any oil company drilling a dry hole, as there are other experts in Los Angeles who can positively locate oil without any failure or surface indication whatever.

Sincerely, (Signed) JONATHAN BEGG.

Who's Who in the Oil Industry.

I believe it was about ten years ago that a mild mannered modest young man arrived in Beaumont, Texas. This young man went quietly to his hotel and for a day spent most of his time listening.

There was but one subject of discussion. This subject was discussed in every store, in every hotel lobby, in every resort throughout the little frontier city.

"Oil" was the magic word. Everywhere could be seen little groups of men talking excitedly of gushers, or dry holes, or leases, or big deals. The profligate hand of the boom-spirit was in evidence. Money jingled everywhere.

Allen G. Nichols had a theoretic knowledge of the petroleum business. He knew in a general way the history of the industry from the discovery of oil in Pennsylvania. He knew how John D. Rockefeller, Henry H. Rodgers and other men

ALLAN G. NICHOLS

became identified with the oil business at the beginning and that they and many of their associates had made immense fortunes from it.

But here was a new condition. Oil was gushing forth from the earth in uncontrollable quantities. Money was flowing from all corners of the earth to purchase proven oil properties and to provide the funds for drilling other wells. Poor men were becoming millionaires over night. It was bewildering.

The young man went to bed that night, his mind a veritable whirlgig of confusing thoughts. For hours he lay thinking and before sleep came he had made one determined conclusion. He had fixed his future course and defined his life's work.

Here was a business that was tremendously profitable| Here was a valuable product, a necessity, a thing the usefulness of which could not be questioned, and its need was growing every day. Tremendous fortunes had been made from it. Some money had been lost and more would be lost in the future, but the fortunes derived from it would likewise continue to grow. The business was clean. It meant the creation of wealth. The profits from oil production took nothing from anyone, but added to the prosperity and comfort of all.

From that day on Allen G. Nichols had but one hobby. This hobby he has ridden persistently. He has kept his mount as steadily over the rough roads as over the smooth.

Being of a studious turn of mind he pored into the subject of oil. He read every book and discussion on the subject and went into deep research. The more profound or technical the thesis, the more deeply he wormed through it. He became virtually saturated with the subject of oil—as in his later career he at times became almost literally submerged in the commodity itself.

He was one of the first to be attracted by the California oil fields. Here was where his deep study of the subject stood him in good stead. It enabled him to forecast what even the enthusiastic Californians were not able to foresee. He saw the advantages of the California oil fields over Texas and all other previously discovered fields. His early predictions for the tremendous future of the California oil industry have been fulfilled, although, at the time they were made they were not infrequently the source of indifferent ridicule.

He founded the "*Oil Industry*," a monthly California magazine. For a number of years he edited this. It was his purpose at all times to convey to the lay individual the story of oil in elementary terms. He took the technical knowledge which he had absorbed and translated it into terms and expressions that those not familiar with the business could understand. He was the author of "Oil," and several other books on the subject. He wrote an "Origin of Petroleum," and many other articles which have been quoted in leading scientific and oil journals throughout the world.

His knowledge of the oil business was practical as well as theoretical. He became identified with some of California's successful oil companies, and thus besides giving the world the benefit of his knowledge he has also made from it a substantial profit for himself.

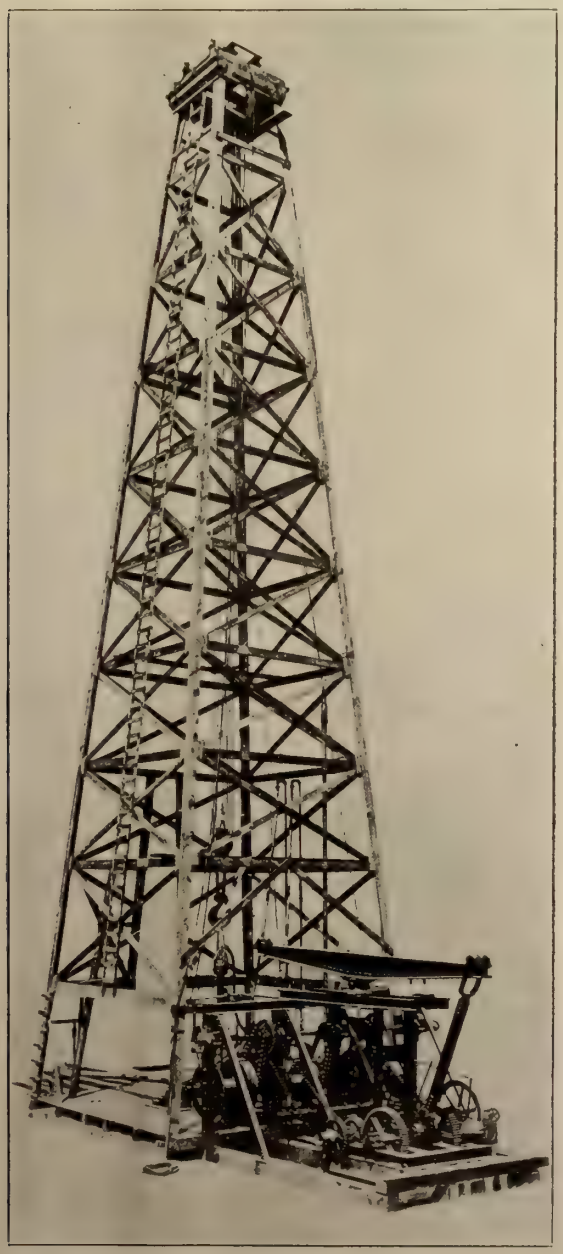
I understand that he has now gone into the Tampico oil fields of Mexico. Perhaps it is well for me that he is at present outside of the boundary line as otherwise he might object strenuously to the little confidences which may be disclosed in this article. I am told that he is at the head of a large corporation which will operate at Tampico. Personally I know little about these new fields. I believe, however, that not many are in better position to judge the future possibilities of a new oil district than he. If Allen G. Nichols says that Tampico has a great future, it is a mighty good camp to pin your faith to.

—B. G. W.

The Zierath Combination Drill Company's New Machine.

Description of a Valuable Device.

There was recently given in this magazine a description of a new combination Rotary-Standard well-drilling device, similar in many respects to the "Zierath," which we are glad to give space here for the general information of the oil public. A write-up of this nature is open to any reader of the **California Derrick** who has patented an article of real and genuine value to the oil business, and we request others to send in their information for publication. But, to describe the new machine:



View of the Zierath Combination Drill

It is an invention which oil men of the country have been endeavoring to approximate for many years, and, from the demonstrations which are being made, we judge that it is all the company claim it to be. The inventor of the rig is Augustus C. Zierath, of Los Angeles, who is president of the Zierath Combination Drill Company, which has a plant at Ninth and Santa Fe avenue, in the above city. Mr. Zierath has been in the oil business for the past thirty years and is recognized as a very well informed man in the business, he having brought in a great many of the important wells in the Texas oil fields. The Drill Company consists of Mr. Zierath, president and general manager; John G. Bullock, of Bullock's Department Store, vice-president; P. W. Croak and W. F. McCann, realty men, treasurer and secretary, respectively, and J. L. Amlin, Southern California field manager of the American Beet Sugar Company, director, so that the company is, apparently, on a very stable basis.

The photographs presented herewith show two views of the machine; one displays the derrick and rig complete, and the other a view of the Rotary and Standard combined, the rotary ready for action with the removable walking beam outside the derrick, but capable of being brought into position for immediate use.

One of the most important claims for the Rotary-Standard is the reduction in time occupied in drilling. The Zierath Company claims that better work can be done with their machine in less than one-half the time required to perform a given equivalent amount of work with either of the two drilling machines now in use, the Standard or the Rotary. The Zierath rig has all of the requirements of a perfect piece of modern machinery for well drilling, being built entirely of structural steel, insuring great stability and one expense in construction only, the initial expense; undoubtedly a great advantage.

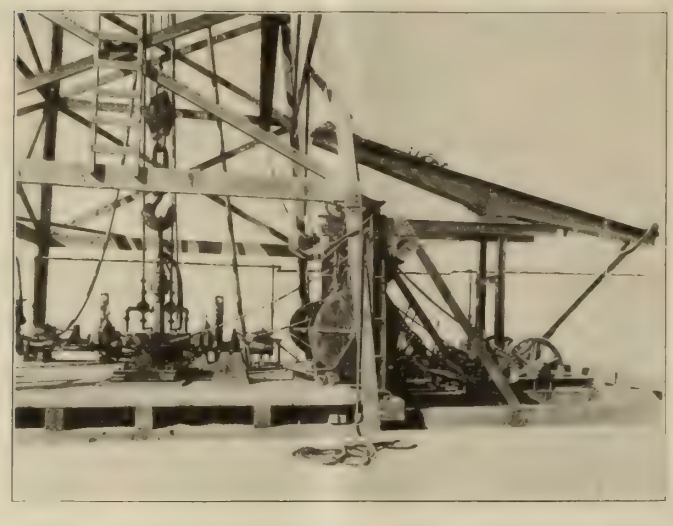
The bearing-boxes, gears, sprockets and shafts are of the best steel and iron. The sprocket chains are of the very strongest—no leather belting whatever being used. The derrick used with the rig is 24x24x106 feet, large enough for handling four joints of casing in one string, and at the same time leaving ample floor space in which to work.

Description of Action of New Machine.

Following is a description of the action of the "Zierath machine as submitted to the **Derrick:**

"Being ready to commence the hole the driller proceeds with the Rotary, fully equipped, thereby avoiding the necessity of doing any spudding in and thus dispensing entirely with the tools required for spudding. But should it ever become necessary at any time to use the Standard rig to start the hole by spudding in, a very ingenious contrivance is arranged under the floor of the derrick so that the spudding can be readily and easily done to perfection if so desired. If, however, the Rotary is used as stated above, the driller continues to go down with the Rotary through the soft formations until a hard strata is struck, whereupon he immediately draws the drill stem from the hole, sets the stem to one side, picks up the Rotary table and places it out of the way, brings the walking beam into position, tips over the temper screw, drops his Standard tools into the well and proceeds at once with the 'Zierath' patented string of Standard tools to drill through the hard formation. This entire change from the Rotary to the Standard is accomplished in less than thirty minutes' time—which, while it seems quite incredible, nevertheless is a fact, being proven every day during the public demonstrations at the company's plant.

Closer View of Rotary-Standard Combination Drill.



This cut, unfortunetely, does not show the end of the walking beam, but same is fully described in article.

"After the driller has gone through the hard formation, and is satisfied that better progress can be made with the Rotary, he at once disconnects the string of tools from the patented temper screw, slides the walking beam out of position, draws the Standard tools from the hole, picks up the Rotary table and places it in position again, and within thirty minutes is again drilling through the second soft formation with the Rotary. And so the drilling goes on, changing back and forth from Standard to Rotary as the necessity arises and thus effecting a great saving of time and labor and the consequent expense."

Continuing with an explanation of the merits of their invention, the Zierath Company bring up the following very interesting points:

Inability to secure a sufficient supply of water or mud necessary to operate the Rotary does not delay drilling as the Standard half of the rig can be utilized.

Three drums are used on the Combination; one handling the Rotary, one the Standard, and the third the baling line. The three cables are always in position for immediate work, being suspended from a six-sheave patented adjustable crown block which can be arranged so as to strike the hole dead center with whichever cable operating. The cables are wound automatically upon the drums and cannot cross, having a perfect guide. This adds to the life of the cable and reduces a big expense item.

The band-wheel, cable-wheel and calf-wheel are done away with, securing great compactness. The cables are always strung up ready for immediate use. The steel walking beam is always connected with the pitman rod and sectional crank, the temper screw being folded back on the other end, out of the way, always attached and ready.

The engine is set close to the derrick. It is worked entirely by levers with handles convenient to the three drums. The sectional crank, which governs the stroke of the walking beam can be adjusted as desired to administer a stroke of from nine inches to four feet, light or heavy. The rig is equipped with four catheads; two on the Standard and two on the Rotary, another advance in convenience. The moving of the Rotary table requires the work of only one man and can be accomplished in five minutes. Great speed can be obtained from the outfit, and the one now being demonstrated is capable of going down 6000 feet, according to the company.

Three sizes of oil well and two sizes of portable water rigs will be manufactured by the company, which has evidently gone into business to stay, having secured a long lease on its quarters. It has patented a specially designed set of Standard tools, including a rock bit, which are equipped with joints making it impossible to lose any tool in the well, and which, if they act as apparently demonstrated, will do away with the "fishing business" once and forever, where this rig is in operation. The tools and rig will be manufactured in Los Angeles at the plant already mentioned.

Considering the fact that many wells can be drilled with the same machine, inasmuch as it can easily be moved to a new location after one well is completed and a light engine and drum have been installed in its place to keep the hole cleaned or pull the casing; and considering its many other apparent improvements over the old style, it seems to us that the Combination is a machine that has come to stay; and that it will, in course of time, supercede the present day machines for drilling. We understand that the "Zierath" company is getting out a catalogue describing their invention and its advantage more fully and in detail than is possible here and that the book will soon be ready for distribution. In the mean time, it seems to us, a personal inspection of their invention will be well worth the time of any oil man who can make it.

PETROLEUM NOTES FROM FOREIGN FIELDS.

The British Government has launched its first oil tanker for oiling vessels at sea. The name of the new boat is the "Burma." She carries 2,500 tons of fuel oil in twelve tanks and her sea speed is twelve knots per hour.

The Italian Government has passed a law to subsidize oil developers.

A pipe line 200 miles in length is to be constructed in the Congo. We understand that it will be merely a 4-inch affair.

The eighth international congress of applied chemistry is to meet in Washington and New York during September, 1912, when we can look for interesting papers dealing with the chemical aspects of petroleum.

We understand that the British Government has ordered the fitting up of all armored vessels to burn oil as well as coal. Big stride, isn't it, especially when all the new British destroyers are to burn oil only?

A campaign to oust American oils from the German market is said to be "on."

Total production of petroleum in Galicia, during 1910, amounted to 1,762,560 tons, a decrease of more than 15% from the previous year's record.

Petroleum News from Near and Far.

It is proposed to tax oil, gas and bituminous coal in Pennsylvania.

Total liabilities of the Cleveland Oil Company are given as $137,505; total assets, $100,000. A receiver for the company has been appointed.

The petroleum product of India and Burmah in 1897 was 19,000,000 gallons; in 1910 it had jumped to 233,500,000 gallons, or 5,559,714 barrels, according to a Consular report.

"Tom" Hayes, of Coalinga, has taken a dozen skilled California drillers to Burmah, to drill for a great English Syndicate.

The United States Geological Survey has just issued its annual chart showing the principal mineral production in the United States in 1909. The petroleum production for that year was fifth in valuation, amounting to $128,248,783. It took a year and three months to compile the chart.

An automobile has traveled from London to Brighton, England, on solidified petrol, carried in lumps in a small box in the car, which represented 40 gallons of petrol in its liquid state. A block of solidified petrol two inches square is equal to one gallon of the liquid. The "solidified" looks like transparent white jelly and can be cut easily with a knife or wire.

It is said that the engines of the Great Northern Railway Company, at least those running through British Columbia and Alberta, are to be converted to oil burners some time this summer, probably by July, and that Standard Oil will furnish the fuel.

The rumors that the Standard Oil Company has prepared for a reorganization already, in case the Supreme Court should decide against it in the action brought by the Government under the Sherman anti-trust law, have been branded untrue by the company.

The Department of Justice has found that there was no evidence to subtsantiate the charge that a combination among the pipe line companies in restraint of trade exists in Oklahoma.

The Kern Trading and Oil Company, the oil department of the Southern Pacific Railway Company, has moved its headquarters from Bakersfield to San Francisco. W. B. Harner is in charge of the K. T. & O.

Artesia and Dayton, New Mexico, two towns lying on the line of the Santa Fe Railroad, between Roswell and Carlsbad, are to be the scene of development for oil this summer, according to a news dispatch. The country thereabouts is a fertile farming land, through which the Pecos River winds its way.

The deepest well in the world, which is in Germany, is 6572 feet deep; the deepest in the United States reaches 5575 feet beneath the surface.

J. B. Weger, formerly of the United States, but now hailing from the New Plymouth, New Zealand, oil fields, states that three producing wells in that field have produced 119,000 barrels of oil in the last fourteen months and that he believes a big oil field will be developed in New Zealand. He further states that the "Government has arranged a price of $5.00 per barrel for the oil."

Oil has been secured by the Scarab Oil Company, in its second well in the Simi Valley, east of Moorpark, at a depth of 1700 feet. Several other companies are becoming active in the valley.

It is said that there are contracts being made for fuel oil in Los Angeles, as low as 60 cents per barrel. That wouldn't touch the average price, however.

The California asphalt market is again brightening, the result of spring returning and roads needing repairing "Way Back East."

It is said that the Southern Pacific Company will soon start work on their proposed pipe line over the Tehachapi to Mojave from Kern River.

Now that Mr. Aubury has given the all-oil-burning Navy movement a vigorous onward push, he is turning his attention to the burning of oil on the United States transports, giving the most cogent and urgent reasons for the move. He deserves, and we believe will receive, the united support of the oil producers, oil transporters, and the general public of the entire Pacific Slope.

The United States Geological Survey has had to bring out a second edition of its report on the Coalinga Oil District. The report, which was written by Ralph Arnold and Robert Anderson, and which goes under the inspiring title, "Bulletin 398," is one of the most thorough and excellent reports of an oil or mining region ever issued, and has met with a remarkable demand. The Survey has also issued several reports on wells, well drilling, etc.

The Bard Oil and Asphalt Company, operating near Santa Paula, Cal., has applied for a franchise for a pipe line from its oil field in the Upper Ojai down the Sisar and Santa Paula canyon roads to Santa Paula. The pipe is not to be larger than 8-inch, and may carry either gas, water or oil. The franchise is asked to run thirty years.

The Union Oil Company has recently secured a contract to furnish 20,000 barrels of road oil at $1.14 per barrel to Los Angeles county. The oil will come from the Southern fields.

The officials of the producing department of the Standard Oil Company will shortly remove from their San Francisco office to the new quarters in the Brower Building, Bakersfield, Cal.

It is said that the Standard Oil Company is planning the expenditure of several million dollars in the extension of the capacity of their Richmond refinery, in anticipation of the enormous business which they will undoubtedly carry on, with the general growth of the burning of residuum and the necessity for distillates and the refined product. The Richmond plant is supplying the Standard's Oriental trade entirely. Also it is turning out all the refined products sold by the company, on this Coast.

A report that an option on the Union Oil Company had been sold is declared untrue. It is furthrmore declared that there is no truth to the statement that President Lyman Stewart, of the Union, has sold his personal holdings in the company to the Standard Oil Company, a news canard running amuck recently. Union is in splendid shape.

The owners of the famed Hardison Perforator are sueing the K. T. & O., the Bakersfield Iron Works (controlled by same interests), Bankers' Oil Company, et al., for infringement of patent.

The Lost Hills Mining Company has been taken over by San Francisco capitalists at a consideration of $174,000. Holdings, 1500 acres in Lost Hills. Will be developed immediately.

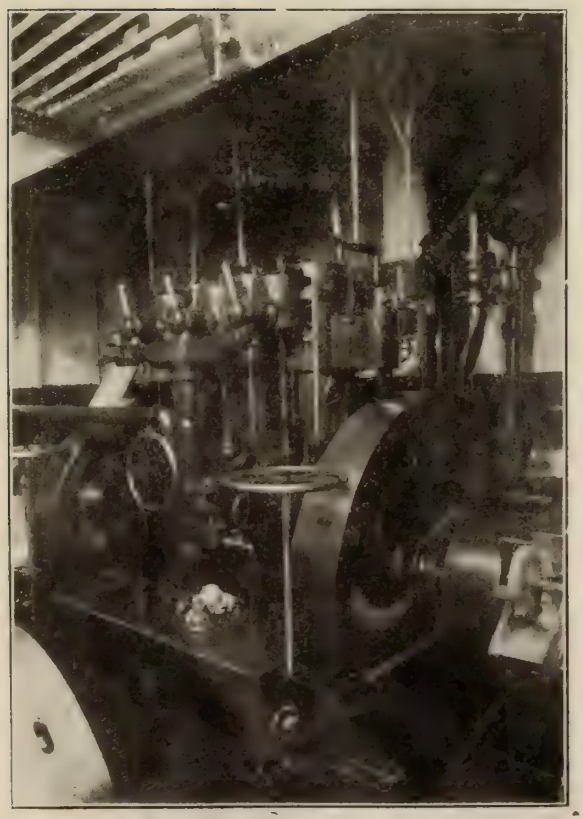
Bergedorf, in the vicinity of Hamberg, Germany, has a gas well which is producing 19,776,000 cubic feet daily. The gas is being allowed to escape without utilization. Sounds like Buena Vista Hills.

Russia's exports fell greatly during 1910.

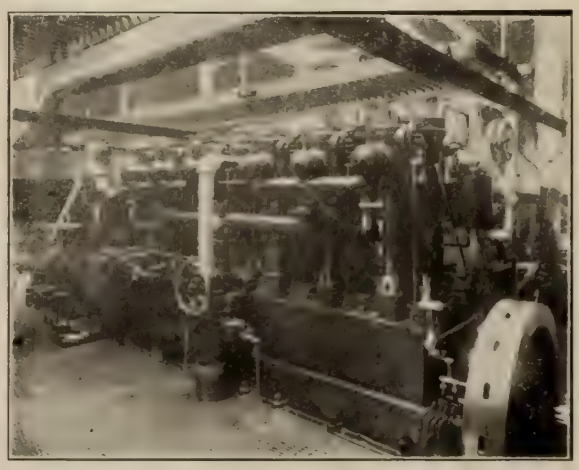
View of the Greatest Internal Combustion Ship in the United States.

The oil carrying Barge "Contra Costa", see opposite page.

Views Showing the "Contra Costa's" Engine Equipment



This is one of Engines, which gives the Contra Costa a speed of eight knots an hour.



The powerful means of loading and unloading the Contra Costa. Pumps here shown force the oil one mile to tankage from dock.

The Use of Internal Combustion Engines in Oil Transport Barges

How the Standard Oil Compyny Carries Fuel Oil from the Point Richmond Refinery to San Francisco Consumers in the Largest Gasoline Motor Boats in Operation in the United States.

The largest commercial gas power boats in the United States which are successfully operating at the present time belong to the Standard Oil Company. They are the oil carrying barges "Contra Costa" and "Benicia" and they operate from Point Richmond to San Francisco, making daily trips. *They have never been out of commission!* They give absolute satisfaction and they effect a great saving for their owner. The entire power of propulsion of the vessel and for the loading and discharging of the liquid cargo is derived from distillate.

We will give here the interesting points of the "Contra Costa" only, as it is the larger of the two carriers, being the largest in the United States.

The Contra Costa has a load draught displacement of 1,580 tons. The hull is constructed of steel and is 189 feet in length between perpendiculars, 37 feet molded beam and 13 feet 6 inches molded depth. It was constructed by the Union Iron Works company of San Francisco.

The cargo is carried in six oil tanks, which are formed by four transverse and one longitudinal bulkhead, each tank being approximately 25 feet long and capable of holding from 1,150 to 1,200 barrels of crude oil, the total carrying capacity being approximately 7,143 barrels. This is the amount transported daily from Richmond to San Francisco, as the vessel always takes on a full cargo. The weight of this amount of oil is 1,058 gross tons, so it may be seen that the Contra Costa is excellently constructed. The reason assigned for such a carrying capacity on a barge of this size is the internal combustion engine. This we will proceed to describe in detail.

The entire power equipment of the Contra Costa was furnished by the Union Gas Engine Company, of East Oakland, and is "internal combustion" from beginning to end.

Propulsion.

Two engines, each of 250 brake h. p., possessing six single-acting, four-cycle cylinders, 12 1-2 inches in diameter and 14 inch stroke, supply the power necessary for propulsion. Both engines are coupled through a self-contained clutch and reverse gear to a 6-foot diameter, three-bladed, bronze propeller. These engines make from 240 to 260 r. p. m. and maintain an average speed of eight knots when the vessel is loaded.

Fuel.

Two steel tanks, built in the after corners of the engine room, which occupies about a quarter of the length of the vessel and is located in the stern, hold the fuel, No. 1 engine distillate. Two small pumps attached to the main engines handle the distillate, sending it through retorts in which it is volatilized by the heat of the exhaust. When the boat is started the effect of the retort action is more or less marked, the exhaust being smoky until the retort has become heated, when it is perfectly clear.

Pumping Equipment for Loading and Discharging.

A specially designed pumping system handles the cargo. When the barge docks at her wharf to discharge the oil the connections are made and the oil is pumped directly from the hold of the ship, by the ship's own power, for a distance of one mile, to tankage. This displays great power and efficiency and should command attention of persons interested in the internal combustion engines. A technical description of the system, taken from facts supplied by the Standard Oil Company, is as follows:

"One 85-h. p., three-cylinder vertical gas engine drives two 8-inch Krogh rotary pumps by means of a Reynold silent chain. Each pump can deliver about 21,000 gallons of oil per hour under ordinary conditions of temperature and lift. With cold oil, long pipe lines and high lift this capacity is somewhat reduced. There are two suction mains, each eight inches in diameter, extending the full length of the tank compartment. Branches, six inches in diameter, lead from these mains to each tank. All valves are of tsraight way gate type, which are not easily obstructed by dirt, chips or other debris. The valve stems are carried to the upper deck through oil-tight stuffing boxes, so that all pumping may be controlled from the deck. By-pass connections are provided so that the suction pipes can be used for loading as well as discharging cargo. The regular discharge mains are six inches in diameter and have one coupling on each side of the vessel forward and one each side aft for hose connection with the wharves. One 25-B H. P., two-cylinder vertical engine is directly connected to a ten k. w. generator which furnishes electricity for lighting and also power to operate an electric windlass forward, an electric capstan aft and electric bilge and fire pumps in the engine room."

There is not a great deal of beauty to the Contra Costa, from the view-point of the maritime man, the idea being to get a large carrying capacity with self-contained power, but there is every convenience for the crew. On the forward end of the vessel is a steel deck house in which are rooms for the chief and assistant engineers, a room for the cook, a toilet, a mess room and a room for the four deck-hands. Above this deck house are the pilot house and captain's quarters. On the whole the barge is very roomy and nicely arranged for the crew.

Following are the advantages the Standard Oil Company claims for their barges in comparing them with equivalent steamers:

"1. The weight and space of machinery and fuel being much smaller, more cargo can be carried on the same dimensions, or the same cargo on smaller dimensions, or on less draught of water, as may be preferred.

"2. First cost is about 20% less in cost of machinery, and should fall still lower with the development of large marine gas engines.

"3. The crew may be smaller as no firemen are required.

"4. From their experience, with one boat in service about four years and another about two years, the cost of fuel is less, as no fuel is used when engines are not running, and the engines are more economical as to quantity used than steam engines using oil for fuel in steam boilers.

"5. The repairs required are quite insignificant compared to those of a steam plant, and most of them are of such a trivial nature that they can be done by the engineers in charge.

"Finally, steam vessels require three days every two months for scaling boilers, which is not necessary on gas power boats. Gas power boats usually pass annual inspection in one hour."

The Contra Costa and her companion barge, the Benicia, were both designed and constructed under the supervision of John Haug, naval architect for the Standard Oil Company. While the Contra Costa is at present being used in Bay service, she has a United States certificate for coasting service and could be used in transporting oil to Coast points should the Company see fit to place her in that department. Assuredly, it would seem that the day of the ocean-going freight and passenger internal combustion vessel is at hand.

Mr. J. C. Rohlfs, of the marine department of the company, has supplied us with the following:

The Standard Oil Company are preparing for even greater economy in future boats of this type, by installing reversible oil engines of the European Deisel type, these engines to burn crude or gas oil at an economy over distillate of about 50 per cent. They are not prepared at this time to give reliable data, but expect to have a boat in operation within twelve months.

ANNUAL MEETING OF THE INDEPENDENT PRODUCERS' AGENCY.

Old Officers Re-Elected; Great Harmony Prevails; Curtailment Decided Upon.

General harmony and optimism in relation to plans for the future characterized the Oil Producers' Agency held in Bakersfield on the 12th instant. The former officers, headed by President L. P. St. Clair, were re-elected with enthusiasm that exhibited itself in hearty applause and practically the same executive committee that served last year was returned..

More Storage Certificates.

A resolution calling for the issuance of storage certificates to cover the 8,000,000 barrels of oil held by the agency in steel and concrete storage, and not covered by certificates heretofore issued, was adopted. Another resolution to the effect that after the present month "no increase of storage oil be allowed to enter into the accounts of the agency for participation in the monthly sales," and providing that the amount of oil received from each company be in proportion to the amount of its producing capacity as estimated by the executive committee, was also adopted. A tentative plan for the formation of a storage company to build steel storage tanks, purchase the oil at present stored by the agency and hold it out of the market for a period of three years, was discussed with apparent general approbation.

The officers elected were: L. P. St. Clair, president; Stanley Morsehead, vice-president; W. B. Robb, secretary, and M. V. McQuigg, treasurer. These, with the following eleven additional directors, constitute the new executive committee: H. H. Welsh, S. A. Guiberson, Jr., George A. Scott, Timothy O'Donnell, C. J. Berry, W. L. Stewart, H. U. Maxfield, F. N. Scofield and M. L. Requa.

New oil companies whose contracts with the agency were ratified were the Ojai Valley, Republic, Black Jack, Alladia, Hatton, Vandever, Brad and Coalinga South Pole.

MEXICO LOOKS A SECOND CALIFORNIA.

M. A. Spellacy, brother of Colonel Timothy Spellacy, has written an interesting letter telling of developments in Mexico by Americans and British capitalists, which shows that Mexico is second only to California, if, indeed, it is second. The Pearson and Doheney gushers and properties are described in detail and operations and conditions generally pictured in a manner serving to show the extent of the known deposits and the amount of oil on hand at present, as well as what may be anticipated from drilling already in progress. Mr. Spellacy wrote, in part: "The oil industry in Mexico has reached the point where the older producing countries must sit up and take notice. From a production of about 12,000 barrels a few months ago, by the bringing in of a few wells, this has increased where, if an open flow were permitted, 175,000 barrels could be thrown on the market, divided as follows: Mexican Petroleum Co. (Doheny), 6000; Huasteca Co. (Doheny), 65,000; Potrero de Llano, Aguila (Pearson), 100,000; Tanghuijo, Aguila Co. (Pearson), 2000; Furbero, Oil Fields of Mexico (Pearson), 8000; total, 181,000 barrels, a huge production."

Allen G. Nichols, who is now in Mexico in the interests of a new company of which he is president, the United Oil Company of Mexico, capitalized at $3,000,000, shares of par value of $1.00 each, has written another interesting letter to the *California Oil World*. Mr. Nichols says that there is a big rush on in Tampico and surrounding districts but advises drillers and oil men who have not secured positions already to stay away from the region if they are looking for work. We understand that Mr. Nichols has enlisted Los Angeles and Boston capital in his company. The officers are: Allen G. Nichols, president; secretary, Jas. R. Riggins, of Los Angeles; R. H. Campbell and Plez James, the former of whom is a former State Senator and the latter formerly cashier of the Ocean Park Bank, complete the directorate, as far as now organized. Mr. Nichols is negotiating for property at present.

The East Coast Oil Company, on property forty miles up the Panuco River from Tampico, and about forty miles south of Ebano, close to the town of Topila, has a gusher now producing 5000 barrels per day; depth, 2300 feet. The gusher is not large as Mexican gushers go, but still, is noteworthy. Los Angeles men have property all around the property of the East Coast, we understand. The East Coast Company's oil can easily be shipped down the Panuco River, which is navigable for the largest vessels.

Tampico, the center of the oil region, is destined to become one of the greatest oil ports in the entire world, if not the greatest. It has a splendid harbor, every facility for shipping oil, and, has the oil to ship. In our next issue we will endeavor to get out a may showing the location of all the big producing districts, colation of wells, their production, facilities for reaching a market and other important points; also, we will have a more detailed article than is at present possible, giving developments to date.

The "Great Pearson Gusher" is causing much damage and inconvenience, as well as some danger, and as a result a petition has been forwarded to President Diaz in complaint. Following is a news dispatch we have received in regard hereto:

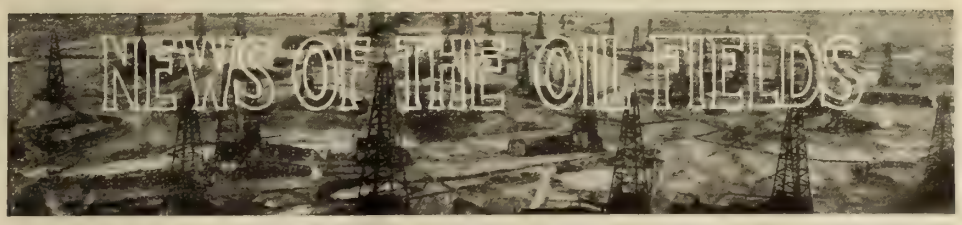
"Tuxpam, State of Vera Cruz, Mexico, April 3, 1911.—In a petition that was signed by about 100 merchants and other leading citizens and property owners of Tuxpam and forwarded to President Diaz complaint is made of the alleged careless manner in which the flow of oil from the great well of the Mexican Eagle Petroleum Company, in the Potrero del Llano field, is handled. The petition recites the fact that the cap upon the big well has been partly displaced and that a large volume of oil is pouring from the casing and flowing into the Tuxpam River. This stream runs through the town and is the deep-water harbor for the port."

The Mexican Eagle Petroleum Company is enlarging its storage facilities in the Potrero del Llano field, having just finished the construction of one earthen reservoir that has a capacity of 3,000,000 barrels of oil. The flow of oil from the well has just been diverted to this new reservoir and it is being filled rapidly.

The Pacific Mail Steamship Company has ordered its coal burning steamers City of Para, Pennsylvania and Aztec to be converted to oil burners; the work is to be done at the Union Iron Works, San Francisco. The saving to be effected yearly by the change is estimated at $160,000. There is a story behind the change; it is rumored that the Pacific Mail Company will be able to sign a new contract with the Government with the Panama Railroad and Steamship Company. Without the change to oil burners, it is said, they wouldn't have a "show" with Bates and Chesebrough in the Panama trade.

UNITED'S NUMBER NINE FLOWING 2,000.

United Oil Company, section 6, 32-23: Well No. 9, recently opened, is said to be doing 2,000 barrels daily; oil going to Standard. No further news.



COALINGA---By Guy H. Salisbury,

California s Best Known Oil Correspondent.

Called to New York.

Guy H. Salisbury has been called to New York by the Government, supposedly for the purpose of testifying against the Wisners. When he returns he will furnish us with more "live" news.

"The Biggest Order Ever Placed."

The biggest order for oil well tools and drilling equipment ever placed in California has been given the J. F. Lucey Company by the Burman Oil Company of British India, of which "Tom" Hayes, the cement man, is developing manager. The order calls for more than $400,000 worth of oil well supplies. It proves conclusively that

California Methods Are Foremost.

California men, California methods, California tools, California supplies, are the acknowledged superiors in the oil well drilling business. The order of this English and Scotch company proves it. All California oil well tools are to be used. It is a grand testimonial. In our next issue we will give full particulars, together with a photograph of the fourteen California drillers who were sent to the new oil field by the British company.

Building a Refining Plant.

The Coalinga Refining Company is building a plant on the property of the Pacific States, on section 6, 21-15, and will enter largely into the business of refining gasoline and lubricating oil for local consumption.

Big Sale to Associated.

The Coalinga Eight Oil Company, of which W. S. Boggs is general manager, is reported on good authority to have contracted to supply the Associated Oil Company with 1,200,000 barrels of oil, "settlement to be made at the same price which the Independent Agency receives." The company has approximately 25,000 barrels in storage and one good producer, while No. 2 is nearing completion.

Big Sale Reported—Unconfirmed.

The Shell Transportation Company, the greatest competitor of the Standard Oil Company abroad, is said to have purchased the following splendid companies in this field: Empire Oil Company, 80 acres; Lucile Oil Company, 100 acres; De Luxe, 40 acres; Amy Oil Company, 20 acres adjoining the De Luxe property; the Zier property, 160 acres; Republic, 80 acres; in all, 480 acres of some of the finest oil producing land on the face of the earth. In addition to this, 180 acres in Cat Canyon, including the Henderson property, and 3000 acres in Vallecitos are declared to have been taken over by the same syndicate; it is declared that Ralph Arnold, formerly of the United States Geological Survey, and one of the foremost oil experts in the world, is the company's geologist and adviser in the purchase.

Troubles of the Blue Moon Oil Company.

The Blue Moon Oil Company, located on Section 6, 21-15:—The North Pole Oil Company, the owners of the ground leased by the Blue Moon, were not satisfied with the manner of the handling of the lease, making claim that the royalty was not being paid as agreed and got out an injunction, which was served recently; the hearing will be had in the Fresno courts at an early date. R. V. Ellis has been in charge of the Blue Moon interests during the month of March, representing Milton Bernard, et al. In an interview Mr. Ellis stated in part the following conditions: well No. 2 had not shut off the water and it was necessary to do so before the value of the sands could be determined. There were two water sands and they were liable to flood the territory. In order to properly shut off the water a 6 1-4-inch string was set in and the well was being cleaned out when the tools reached a point where an obstruction would not allow them to pass; the 8 1-4-inch casing was pinched and this necessitated the removal of the 6 1-4-inch casing which was done. The next move made was to try and loosen the 8 1-4-inch casing and pull it; with this object in view, that with the removal of the 8 1-4-inch, the defective joint could be taken out. But while the work was in progress the injunction papers were served on Mr. Ellis, stopping all work, and even tieing up the producing well. Mr. Ellis states he was instructed to shut off the water and test the oil sands as he worked up to theupper water sand; that he was to shut out the water in both sands and thus protect the field. The company has spent over $90,000 in their effort to develop this property. The members of the management have spent their own money, in some cases, in an effort to complete the well and shut out the water. It is claimed by persons supposed to know their affairs, that the North Pole interests were suspicious that the work was not done in good faith. There is a possibility of the interests effected in both companies getting together in the very near future on a policy that will settle their differences.

California Oilfields, Ltd., Continues Developing.

The California Oilfields, Limited, on Section 27, 19-15:—The company are running five strings of tools on new work; two strings are kept busy cleaning out wells that sand up. Some new work is being done on section 10, 19-15. On section 14, 19-15, well No. 7 was completed early this month and when put on the beam it developed 310 barrels of 22 gravity oil. The oil on this section is very free from sand, is a smooth clean oil, causing very little trouble and no loss of time. The well is situated in the northeast quarter, near the center of the section. There have been constant rumors of a new contract for their oil with first the Associated, then with the Standard; the officers are not giving out any information, but

are delivering the oil the same as last year. The Associated contract expires some time in April of this year.

Oil Well Supply Company Increases Facilities.

The Oil Well Supply Company, Captain T. J. Turner, local manager:—The company has determined to increase their facilities for doing business at their shop on Front and Sixth streets and an addition to the plant will be built on the west side fronting F street, of corrugated iron, 16x48, two stories in height. The office and draft room will occupy the ground floor while the upper floor will be finished off with rooms to accommodate the men. The interior of the building will be lined and sealed with "T and G stuff" and will be neat in appearance, giving the local manager much needed room with which to handle the increasing oil well tool repairing business.

Warm Weather Aids Pipe Line Companies.

The few warm days have assisted the pipe line companies to move the oil through their lines. The ground is drying out very fast and is warming up and the business of companies will soon assume normal conditions, which will in turn relieve the storage conditions in this field. The Associated Transportation Company's line is being replaced in the breaks made during last winters' severe storms. The line will very soon be in condition to take oil. The work is being done in a very substantial manner and will stand. The experience of the winter just past has suggested many changes in the line. The management is to be congratulated in the very good progress they are making in the repair work.

Coalinga Red Top Will Resume.

The Coalinga Red Top Oil Company, section 6, 21-15:—After standing dormant for several months the company are planning to resume operations. Z. L. Phelps has been given control of the well and is now testing the condition of the hole. The top water will be shut off at about 2,505 feet, after which a string of casing will be carried down and the second water shut off. Mr. Phelps knows the formation of section six, and is confident he will have no trouble in finishing the hole into the oil sand.

Pluto Cements No. 1.

The Pluto Oil Company, section 19, 25-19. Well No. 1 was cemented at 2,100 feet, 10-inch casing. About 2,600 feet of 8 1-4 inch casing was hauled down last week. This string will be sufficient to complete the well. Drilling has again been resumed. The company expects to get the pay sand at about 2,500 feet. The men on the well have been quietly picking up loose stock about town for the past two weeks, which is taken to mean that they have confidence in the territory.

Coalinga National Pet. Company.

The Coalinga National Petroleum Company, section 8, 20-15. There appears to be a truce between the factions, the Barneson interests are claiming a working majority, while the Cleary-Martin-Bowen interests are not admitting anything. The annual meeting of the stockholders occurs early in May and as 30 days advertising for a called meeting would be necessary the Barneson interests are content to wait, and the conditions at the well are the same.

Coalinga Mohawk's No. 3 A Deep Well.

The Coalinga Mohawk Oil Company, section 12, 20-15. Well No. 3 is about 4,600 feet down, with heavy 6 1-4-inch casing, the longest string in the field; the last water sand will be cemented with this string of pipe. The well will be finished up with the 4 1-2-inch string. The formation is very encouraging for a good well and at the great depth it is expected the oil will be of very light gravity.

British Cons. Gets Good Well.

The British Consolidated Oil Corporation, Limited, section 26, 19-15:—Well No. 2 was finished last week and put on the beam and it is now making 250 barrels per day; the oil is 21 gravity, plus. In this sand the well will increase as she flows, the gas working out the channels to let the oil come to the vent caused by the hole drilled.

Alladin Close to Sands.

The Aladdin Oil Company, section 6, 20-15:—Z. L. Phelps has charge of this property. He states that 100 feet more will complete the well. He is very confident he can make a producer of well No. 1 also. The well will be finished at about 2,582 feet with 6 1-4-inch casing.

Empire No. 3 Near Completion.

The Empire Oil Company, section 32, 19-15:—Well No. 3 will be completed at about 2,680 feet, 4 1-2-inch casing. The tools are now in the oil sand and the formation is identical with that of well No. 1.

Turner O. Co. Ready to Operate.

The Turner Oil Company, section 2, 20-15:—Rig for well No. 3 has been completed; will be rigged up very shortly. A battery of boilers are being set up to operate the water plant, two 40-h. p. boilers being used.

Standard's "Sontag" In Oil.

The Standard Oil Company, section 36, 19-15. The Sontag well is in the oil sand at a little over 3,400 feet, 6 1-4-inch casing; the well will be finished up at about 3,800 feet.

Castle Oil Company.

The Castle Oil Company, section 4, 20-15:—Well No. 1 is in the water sand at 3,540 feet, carrying heavy 6 1-4 inch casing.

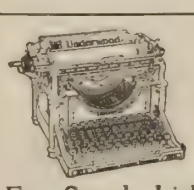
W. K. Completes Rig.

The W. K. Oil Company, section 2, 20-15:—A full standard rig has been completed for well on location No. 8; will soon be rigged up.

IMPORTANT DECISIONS IN LAND CASE.

United States District Judge R. S. Bean, of Portland, Oregon, in a recent case where title to land was in controversy, has decided that the "mineral exception" clause in the grants to the railroad companies was valid and that the issuance of patent by the government to railroads for such lands was conclusive evidence that the government believed that the lands were non-mineral in character. The case in question was that of the Eastern Land Company vs. The Willow River Company and the Judge held that the fact that patent had been granted was not an adjudication that the land was agricultural only, but that on evidence of its mineral character the patent became void so far as minerals are concerned.

The interest of this decision to California oil operators lies in the fact that vast areas of land are held by the railroads in this State, principally by the Southern Pacific Company, which it is thought will be directly affected by this decision in the various suits pending.



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SUNSET-MIDWAY-McKITTRICK

By W. D. MALTMAN.

PALMER ANNEX OIL CO.

From good authority we have learned that a minority interest in the Palmer Annex Oil Co., has recently been sold to a British syndicate, at a price equivalent to $5000 an acre for the land. Also that the company has ordered material for five new derricks.

UNION OIL CO.

For almost a year the Union Oil Co. have been working with their Bell No. 5 well on the Bell tract, and have just succeeded in bringing it in by the use of compressed air; at this time it is reported to be producing better than 1500 barrels a day.

NEW PENNSYLVANIA PETROLEUM CO.

Although the New Pennsylvania have continued to pay dividends for the past six months, they have been persistently working on their Cat Canyon well. The six-inch casing is in and the oil has gushed over the derrick several times within the past few weeks and it is believed by Cat Canyon operators that this well will prove one of the best in that district.

PALMER OIL CO.

The "old reliable" Palmer No. 1 continues to produce 1700 barrels a day with indications of an increase in its flow. No. 2 has gained about 2000 barrels a day since it first started to gush and at this writing is producing about 11,000 barrels a day. Nos. 3 and 4 have been shut down until the big 750,000 earthen dam is completed. No. 5 is down 2793 feet. No. 6 has reached a depth of 800 feet. No. 7 (on the Palmer Stendel Tract) is temporarily shut down, while the crew rig up No. 8 on the north border of this tract.

PALMER UNION OIL CO.

The No. 1 well on this property shows a very heavy gas pressure with indications of being equally as large a producer as any one of the Palmer wells. No. 2 is being cemented and drilling is suspended until the cement sets. No. 3 is down 1070 feet with 12½-inch casing.

SANTA MARIA PETROLEUM AND PIPE LINE CO.

Some of the officials of the Oro Water, Light and Power Co. have just purchased the Henderson Oil Co., and together with several hundred acres of valuable oil land in the Cat Canyon District have organized the Santa Maria Petroleum and Pipe Line Co., on the Henderson property, which is about a mile southeast of the Cat Canyon Oil Co.'s holdings. Three wells are to be started at once.

BROOKS OIL CO.

The oil from well No. 2 of the Brooks Oil Co. is getting lighter and indications are favorable for an increased production from this well. The company have their pipe line completed to the Sisquoc Depot but have been delayed in making shipments on account of the heavy storms.

SANTA MARIA ENTERPRISE OIL CO.

Well No. 1 of the Santa Maria Enterprise is making good headway drilling at a depth of 1600 feet. This property is just south of the New Pennsylvania Petroleum Co., and is in line for a good producer.

SANTA MARIA MIDWAY OIL CO.

On account of the heavy storms the Santa Maria Midway have been delayed in spudding in but operations are expected to start in the near future.

PRINCESS OIL CO.

Well No. 1 on the Tunnel Tract, of the Princess Oil Co., is progressing very nicely at a depth of 940 feet. It is reported that several new derricks are to be erected in this civinity.

SUMMIT OIL CO.

The Summit Oil Co. is in good formation at 2100 feet. The development of this well is being watched very closely by Cat Canyon operators as it will prove over a mile and a half of intervening territory.

CAT CANYON OIL CO.

On account of recent storms drilling was delayed on well No. 1 of the Cat Canyon Co., but work has been resumed and the 10-inch casing put in at a depth of 950 feet. The surface difficulties having been overcome very rapid progress is anticipated in the future.

MAMMOTH OIL COMPANY'S GUSHER.

The Mammoth Oil Company's well No. 2, which came in a great gusher during the latter part of last month, producing at hte rate of 30,000 barrels per day, tanking 16,000 barrels in sixteen hours. The well is located on the company's property, about one-half mile or so from Fellows, the exact location being section 31, 31-23. The oil is of a high gravity, testing 26° Baume, and is contracted to the Standard Oil Company. Depth, slightly less than 2300 feet. The well is under control and is making 7,000 barrels per day at the present time.

LAKEVIEW GUSHER LESSORS SUE UNION OIL COMPANY.

Suit has been instituted by Parker Barrett, Julius Fried, J. M. Dunn and A. E. Hodkinson, against the Lakeview Oil Company, of which the Union Oil Company holds the controlling interest, to secure damages in the sum of $100,00, possession of the royalty oil, one-sixth of 8,000,000 barrels produced (worth $500,000.00), possession of the property and cancellation of the lease, and the appointment of a receiver with full authority to operate the property and dispose of the oil. The suit is virtually against the Union Oil Company, which went to enormous expense to care for the gusher's oil, and which was undoubtedly the only company besides the Standard or Associated, that could have done so.

Only $12,000 has ever been paid to the plaintiffs. The suit has not yet come up for trial.

RECEIVER APPOINTED FOR SUNSET ROAD OIL CO.

A receiver has been appointed for the Sunset Road Oil Company, which possesses holdings in the Sunset field amounting to 7,000 acres. The receiver was appointed as a result of an action instituted by John Baker, Jr., on behalf of the Kern Valley Bank of Bakersfield, holders of $1,000,000 worth of bonds of the company.

SUES STANDARD OIL.

The firm of Miller & Lux, owners of Buena Vista Lake, from which a large irrigation system is fed, have instituted suit against the Standard Oil Company to restrain said company from allowing any more oil to escape into the lake than that which they claim has already been permitted to flow from its pipes.

STANDARD GETS ANOTHER FLOWING WELL.

When the Standard Oil Company recently brought in well No. 7 on section 14, 32-23, at a depth of 3,000 feet, they got a gusher which flows about 500 barrels per day. The oil is somewhat heavier than that produced by well No. 2; latter well is making about 800 barrels daily.

MARICOPA QUEEN HAS GOOD WELL.

Maricopa Queen No. 1, which came in during the past thirty days, produced at the outset approximately 2,000 barrels per day. The well, which was drilled with a rotary, was finished in four weeks at a depth of 1,800 feet—which was fast time and exceptional luck. No further news.

LADY WASHINGTON OIL COMPANY.

Lady Washington Oil Company, Sunset field. Company expects very good production from both of its wells. March 20th company received encouraging telegram from H. B. Guthrey, one of the founders, stating that "Lady Washington No. 2 flowed at rate of 1,000 barrels per day for short time. Flow promises to be steady as soon as water is shut off. Trouble is purely mechanical. Value of land absolutely proven. Forces of men and teams at work on reservoirs anticipating flow. Number one pumped at rate of 200 barrels last night and water is shut off. Signed, H. B. Guthrey." Mr. Guthrey is vice president of the Yellowstone Oil Company from which the Lady Washington leases one of its 40 acre tracts.

PIONEER MIDWAY MUDDLE.

T. J. Wrampelmeir, a stockholder of the Pioneer Midway Oil Company, has instituted suit against I. Strass berger, manager of that corporation, charging the latter with taking money from the treasury of the company, fraudulently appropriating cash subscribed for shares and generally managing the company for his own profit. The original complaint named Strassberger, Howard C. Holmes and George S. Payne, the directors, as defendants, and they were sued to compel the repayment to the corporation of $150,000 which Strassberger was alleged to have received from the Associated Oil Company as commission on a sale of lands in Kern County.

ASSOCIATED GETS OIL IN ELK HILLS WELL.

The Associated Oil Company's well on section 26, 31-23, in the Elk Hills, has struck oil, having produced some 50 barrels, on the pump, in ten hours. The hole is 3,500 feet deep and the oil produced tested between 33 and 34 degrees gravity, Baume. The oil is flowing out from an inch and a half tubing, which is some 500 feet from the bottom of the well. There is a heavy gas pressure and it is probable that the well will produce in larger quantities as time passes.

HART OIL COMPANY.

The Hart Oil Company's well on section 13, 31-23, which is down more than 3,500 feet with two-inch pipe, is still in water. The Midway Driller says that the well will be put on the pump to test it for a water well.

BREVITIES.

The Continental recently sustained a loss of $2,000 due to the destruction by fire of well No. 1's rig and machinery.

Messrs. Ragsdale & McCreary struck a big water flow in their well on section 20, 31-24. Water may be used to supply drilling wells.

The Western Water Company is to supply Taft and surrounding territory with water. An expensive plant be installed to pump the water from a 40-foot water well on section 5, 25-31.

.. Oil Maps ..

Just Out

The Barlow and Hill book of maps of Coalinga, Kern River, Sunset, Midway and McKittrick fields, with list of companies. Also maps of entire State.

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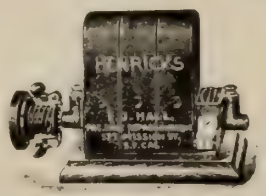

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The deal for the sale of the Mt. Diablo property, consisting of entire section 26, 32-23, on which the Mascot and other properties are located, is off, the $10,000 payment being forfeited.

The Engineers Oil Company, a new concern, has purchased 60 acres for $90,000. Company capitalized for $225,000. A close corporation. Property located on section 14, 31-22. Will develop.

The California King Oil Company, on section 7, 11-23, Sunset, leasing from the Yellowstone, has transferred its eighty acres to the Guaranty Oil Company. Price not ascertained.

The Esperanza Consolidated has brought in two new wells on section 25, 32-23, each good for from 75 to 100 barrels. Depth, about 1,200 feet.

Pennsylvania Midway's well on section 15, 32-23 is holding up well, in fact increasing, now making close on to 2,000 barrels daily.

The Midland Oil Company, section 32, 12-23, has three wells producing and is erecting a 50,000-barrel steel storage tank.

The Maricopa Visalia, on the Sunset flat, is attempting to shut off the water. A 60-foot oil sand was struck at 1800 feet.

Temporary quiet reigns in the Lost Hills country, where hostilities between "jumpers" and "original" locators have been raging. Gun play is no longer the order of the day and legal agreements are now seen to be more advantageous than paying lines of armed men to guard stolen properties.

The Midway Southern Oil Company has assigned its lease to the west half of the northeast quarter of section 8, 11-28, obtained from Charles A. Son to W. W. Myers. The terms of the deal are not publicly known.

The Sunset Monarch has bought a controlling interest in the Fulton Oil Company. Later property consists of 120 acres, section 1, 11-24, on which aer twelve producing wells furnishing approximately 800 barrels of asphaltic oil daily. Terms of sale unknown. Spreckles' interests of San Francisco, control Sunset Monarch.

Madison Oil Company, McKittrick & Kern fields: Company is now delivering about 2,000 barrels per month to Agency from well No. 1 on the Kern River property. Well No. 2 is about to be started; company expect to finish same by June first, same depth as No. 1, which is very good producer for Kern River. No further news.

The California Midway Oil Company has brought in well No. 4 on section 32, 21-23, with a big initial flow. Other information later.

Advices from Fellows state that well No. 5 of the Honolulu Consolidated Company, not far from the Mays gusher, is flowing 3,000 barrels of oil per day.

Well No. 8, of the American Oilfields Company, (Doheney), section 32, 22-24, Maricopa, has come in, with an approximated initial flow of 1,000 barrels per day; increasing. The gusher, No. 79, is still producing about 2,000 barrels per day.

Water is alleged to be troubling some of Standard Oil's wells on section 28, 32,24.

A report that the Consolidated Midway is in the market to British capital is being denied; no confirmation obtainable at present.

The United Oil Company, which, for the three months, January, February and March, paid 54,300.32 in dividends, will from now on pay quarterly.

The Scottish Oilfields, Ltd, operating in the Elk Hills, is down 2000 feet.

The United Oil Company, it is state, will install a plant in the very near future, to manufacture gasoline from gas. More dividends.

The Sunset property of the Templor-McKittrick Oil Company is to be the scene of another well's operations, No. 3, which will be located near No. 1, a shallow well with a good production. Company has considerable road oil in storage and expects to dispose of same in early future, now that road work is being resumed throughout the country.

Recent Incorporations

Vancouver Midway Oil Company, San Francisco; incorporated January 10; capital, $100,000; directors, A. L. Weil, M. Syme, A. Caminetti, Jr., San Francisco.

Tarantula Oil Company, Bakersfield; incorporated January 12; capital, $160,000; directors, S. B. Rose, Los Angeles; J. W. Barbour, Hanford; A. B. Rosenberg, J. H. Mittenthal, E. M. Dineen, Fresno.

The Rose Oil Company, Phoenix; articles filed January 14; capital, $500,000; directors, W. J. Little, Rose Little, Alfred Morganstern.

Lopez Canyon Oil Company, San Luis Obispo; incorporated January 16; capital, $500,000; directors, V. L. Donati, Arroyo Grande; C. J. McGovern, W. H. Schulze, Peter Zanolli, R. W. Nuttall, T. A. Greenleaf, San Luis Obispo.

Wilson-Berg Oil Company, San Francisco; incorporated January 20; capital, $500,000; directors, R. S. Presley, George M. Osborne, San Francisco; C. M. Wilson, Mono Lake.

The Fisher Blanchard Company, San Francisco; incorporated January 23; capital, $10,000; directors, F. J. Fisher, Oakland; Geo. N. Blanchard, Jesse W. Bryan, L. F. Miller, Sterlind Carr, San Francisco.

Midway Alliance Oil Company, San Francisco; incorporated January 27; capital, $1,000,000; directors, E. G. Ek-Johnson, J. B. Cottle, Fred G. Cox, A. J. Wright, H. O. Fairlie, San Francisco.

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OFFICIAL QUARTERLY STATEMENT OF THE SAN FRANCISCO STOCK EXCHANGE.

Following is the first official quarterly statement issued by the San Francisco Stock Exchange, giving prices quoted on all listed oil securities, names of company, dividends, amount per share, date paid and total to date:

	Bid.	Asked.	DIVIDENDS. No.	Date.	Amt. per Share	Total to Date
Amalgamated Oil Co	55.50	60.00	18	3 11 11	.03	205,200.00
Alma Oil Co.		.95	32	9 15 10	1.00	1,600,000.00
American Petroleum (prefd)			21	3 1 11	.66	356,019.45
American Petroleum (com)		15.00	21	3 1 11	.66	1,969,857.65
Amy		.75				
Apollo			2	3 20 05	.01	4,000.00
Associated Oil Stock	52.25		4	3 1 07	1.50	1,518,368.54
Associated Oil Bonds 5s						
Bay City			8	10 15 10	10	155,000.00
Blue Moon		.05				
Brookshire	1.45		15	1 1 10	.01	442,500.00
California Midway		.53				
California Oil & Gas						
California Seaboard Oil Co.						
Caribou Oil & Mining Co.	1.25		71	3 15 11	.02½	942,640.74
Claremont	1.22½		70	3 28 11	.02	445,000.00
Coalinga Central						
Coalinga Mohawk		.95				
Coalinga National	.20	.21				
Coalinga Pacific			18	12 23 09	.10	107,250.00
Columbia			60 & 61	2 25 11	½ & ½	474,715.69
Consolidated Midway	.13	.14				
Cresceus	.40	.46				
Dabney		.10				
Del Rey			7	1 1 11	.00½	27,492.50
De Luxe	1.15	1.25				
Dominion Oil Co.						
Eldorado						
Empire	1.60		8	12 31 10	.01	16,000.00
Enos						
Esperanza			26	12 27 09	.02	49,450.00
Euclid			43	2 1 11	.00½	143,250.00
Four Oil			68	2 25 10	.01	213,000.00
Fulton		.25				
Globe			22	10 1 10	.01	93,000.00
Gypsy			4	8 1 10	.07	40,000.00
Home			A29	3 20 11	.02	498,000.00
Homestake			50	3 16 11	.10	82,250.00
Illinois Crude	.25	.30	40	6 1 10	.01	94,000.00
Imperial			71	7 18 10	8.00	4,000,000.00
Jade Oil Co.						
Junction			8	6 1 09	.01	20,000.00
Kern River			50	1 1 11	.10	120,000.00
Linda Vista			24	1 21 11	.01	88,285.50
Lucile			16	12 20 09	.10	42,727.04
Mascot	2.00	2.05	14	3 20 11	.03	150,000.00
Maricopa National	.24	.25				
Maricopa 36	1.55	2.00				
McKittrick	.15					

Mecca	.....	.....	6	7 15 09	.03	71,825.00
Midway of Oregon	.....	.....	.....	.....	.....	.....
Monte Cristo	2.05	.....	71	3 18 11	.05	915,000.00
Mountain Girl	.....	.....	1	8 4 10	.02	7,000.00
Mexican Petroleum	.....	.....	56	4 1 11	.01½	4,113,350.01
M. & M.	.....	.....	.....	.....	.....	.....
Nevada County	.....	.....	3	10 13 08	.04	40,000.00
Nevada Midway	.16	.....	.....	.....	.....	.....
New Penn. Petroleum	.65	.70	10	3 15 11	.00½	40,000.00
Occidental	.15	.....	.....	.....	.....	.....
Orcutt Oil	.....	.....	.....	.....	.....	.....
Pacific States	.25	.27	.....	.....	.....	.....
Palmer	1.40	1.42½	22	3 25 11	.01	466,770.56
Palmer Union	.56	.....	.....	.....	.....	.....
Paraffine	.....	.85	17	3 15 11	.01	51,000.00
Patricia	.....	.....	.....	.....	.....	.....
Peerless	.....	4.00	77	9 20 09	.06	801,000.00
Piedmont	.....	.15	7	5 9 10	.01	26,877.30
Pinal	4.75	.....	62	10 30 10	.10	991,835.50
Premier	.62	.....	4	7 20 10	.01	40,000.00
Producers	.....	.....	2	9 22 10	.50	120,000.00
Radium	.....	.....	.....	.....	.....	.....
Record	.....	.....	22	3 15 11	.10	152,500.00
Republic	.53	.....	.....	.....	.....	.....
Rice Ranch	.....	1.80	23	12 31 10	.03	126,000.00
Rico	.....	.....	.....	.....	.....	.....
Sacramento	.....	.....	.....	.....	.....	.....
S. F. & McKitrick	12.50	14.00	31	11 1 10	.30	460,000.00
Sauer Dough	.....	1.60	61	3 21 11	.02½	484,136.00
Section 7	.....	.....	.....	.....	.....	.....
Section 25	.....	.....	13	3 25 11	.25	130,000.00
Sesnon	.....	.....	16	3 7 11	.07	171,000.00
Shawmut	.....	.....	.....	.....	.....	.....
Silver Tip	1.00	1.05	6	3 10 11	.02	33,000.00
Sovereign	.....	.18	20	1 18 11	.01	105,000.00
S. W. & B.	.25	.26	7	9 10 09	.01	41,470.00
State	.....	.....	.....	.....	.....	.....
Sterling	1.75	.....	23	3 15 10	.12½	776,250.00
Sunset Monarch	.50	.....	.....	.....	.....	.....
Superior	.15	.....	13	12 17 10	.01	67,500.00
Thirty-Three	.....	.....	60	8 6 10	4.00	1,090,000.00
Traders	.....	.....	17	5 15 10	1.00	209,146.50
Turner	1.22½	1.27½	.....	.....	.....	.....
United Petroleum	.....	.....	115	3 20 11	.50	2,703,841.42
Union	.....	.....	176	3 20 11	.60	8,267,288.75
United Oil	.66	.71	10	3 10 11	.01	124,255.10
West Coast (com)	.....	.....	.....	.....	.....	.....
West Coast (prefd)	.....	.....	6	9 1 10	2.00	124,896.00
West Shore	.....	.....	47	12 21 08	.05	235,000.00
Wolverine	.40	.....	.....	.....	.....	.....
W. K. Oil	2.47½	2.60	.....	.....	.....	.....
Western Union	.....	.....	.....	2 25 11	.50	487,451.00
Yellowstone	.....	.25	1	5 08	.01	8,000.00
Storage Certificates	.34	.....	.....	.....	.....	.....

Dividends paid by former listed companies since absorbed or sold ..... $ 1,993,136.12

Total dividends paid to date $37,453,792.26

Refiners, Producers, Marketers, Manufacturers of Machinery

Everywhere

You are reading this advertisement just as somebody else whom it would be to your commercial advantage to get into touch with would be reading YOURS, if you would

Give us your support

The "Derrick" reaches every country where petroleum and its products are in use England, all English Colonies, France, Germany, Russia, Japan and Mexico---Everywhere where there is OIL, the California Derrick is read.

Standard, Associated and Union Oil Company officials read the "Derrick". The greatest refiners, producers and transporters in the world read the "Derrick."

The largest as well as the smallest operators on the Pacific Coast read this Magazine---and they will read **your ads.**

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We absolutely cover the California Oil Fields, the California Oil situation and all that pertains to California Oil.

The "Derrick" is the only scientific oil magazine in California today---and it is also the best---as well as the oldest.

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Write to us for our low advertising rates. They will benefit you. We wish only clean ads from reliable people. If you cant show us a clean record, don't try business with us. If you can, we want your business.

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¶ All sizes, weights and kinds used in the California Oil Fields

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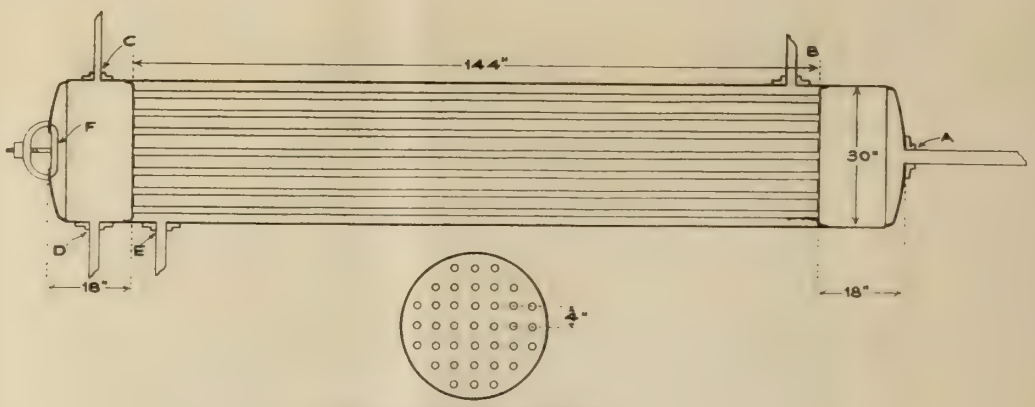
All Sizes Interchangeable With Other Standard Makes

Illustrations for Paul W. Prutzman's Article "A Continuous Topping Plant" (See opposite page)

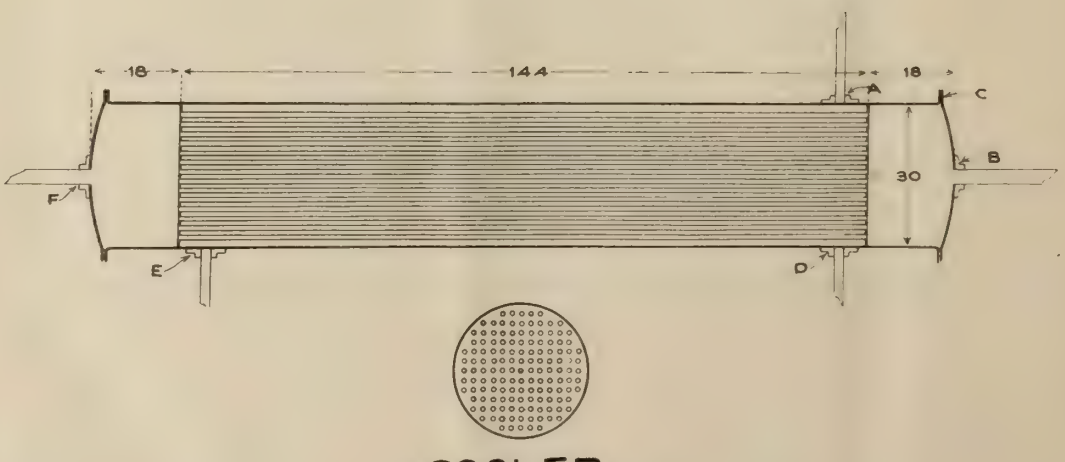


CONDENSER

CLOSED TUBULAR TYPE

161 □ FEET C·S·

J. P. PRUTZMAN & SON
PETROLEUM ENGINEERS
184
1030 6TH STREET BERKELEY
710 MERCHANTS TRUST BLDG.
LOS ANGELES



COOLER

CLOSED TUBULAR TYPE

355 □ FEET C·S·

J. P. PRUTZMAN & SON
PETROLEUM ENG. NEERS
185
1030 6TH STREET BERKELEY
710 MERCHANTS TRUST BLDG.
LOS ANGELES

Drawings by Author

CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

Val. 3 SAN FRANCISCO, CAL., MAY 25, 1911. No. 12

A Continuous Topping Plant

By PAUL W. PRUTZMAN,

of the California State Mining Bureau

Geologist, Chemist and Author

(Author's foreword: Following is from a bulletin on "Water in Crude Oil," in preparation by the State Mining Bureau, and Shortly to be issued.)

Fuel Efficiencies

Calculated for 100 gallons of above oil. (See April number California Derrick).

Intermittent Process

Heat 100 gallons oil from 60 degrees to 500 degrees Fahr. 100x8.31x0.909x440x0.5 (spec. heat)	166,188 B.T.U.
Distil 20 gallons 47 degrees tops 20x8.31 0.791x500 (est. latent heat)	65,653 B.T.U.
Distil 2 gallons water 2x8.31x9.66	16,036 B.T.U.
Injection steam, 20 per cent. of tops—2 gallons 2x8.31x(440 plus 966)	23,367 B.T.U.
Heat effectively used	271,244 B.T.U.
Fuel actually burned, not less than 5 per cent. (5 gallons) 5x8.31x0.962x18,000	719,460 B.T.U.
Efficiency of fuel as used	37.7 per cent.

Continuous Process

Heat 100 gallons crude, as above	166,188 B.T.U.
Distil 20 gallons tops, as above	65,653 B.T.U.
Distil 2 gallons water, as above	16,036 B.T.U.
No injection steam	
Total consumption of heat	247,877 B.T.U.

RECOVERIES

From Condenser—		
Latent heat, 20 gallons tops	65,653	
Sensible heat, 20 gallons tops to 60 degrees	36,520	
From Cooler—		
Sensible heat, 78 gallons residue to 150 degrees	109,095	
From Condenser—		
Condensation 2 gallons water, 500 to 60 degrees	23,367	
Total recovery of heat		234,635 B.T.U.
Net heat consumption		13,242 B.T.U.

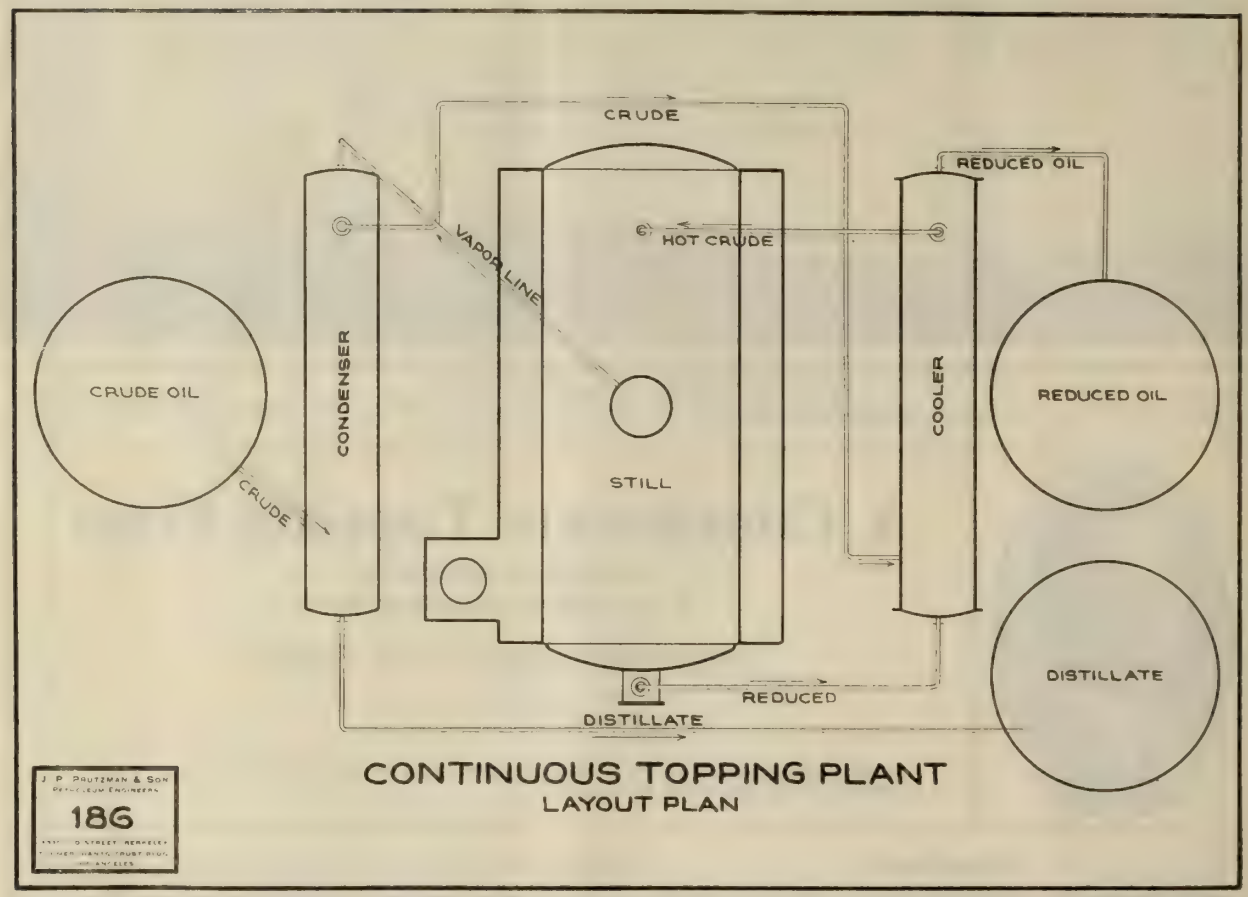
Now if the heat required at the still in the continuous process were provided by burning oil with the same relative efficiency as in the intermittent process (and there is every reason to believe that the fuel could actually be used more efficiently), the amount of fuel used per 100 gallons of crude would be an amount which would supply 35,100 B. T. U., or 2 pounds, or somewhat under 1-4 gallon per hundred of oil distilled. To get this result it would be necessary to insulate carefully against heat losses, but on the other hand, the firebox efficiency would be very much higher than here figured, as all the losses due to crowding fires and to cooling of setting during recharging, would be done away with. So that while the figure is rough, I think that for this particular case we are justified in figuring on a maximum fuel consumption of 0.5 per cent of the crude run, and a probable consumption not over half that figure.

Distillation Speed

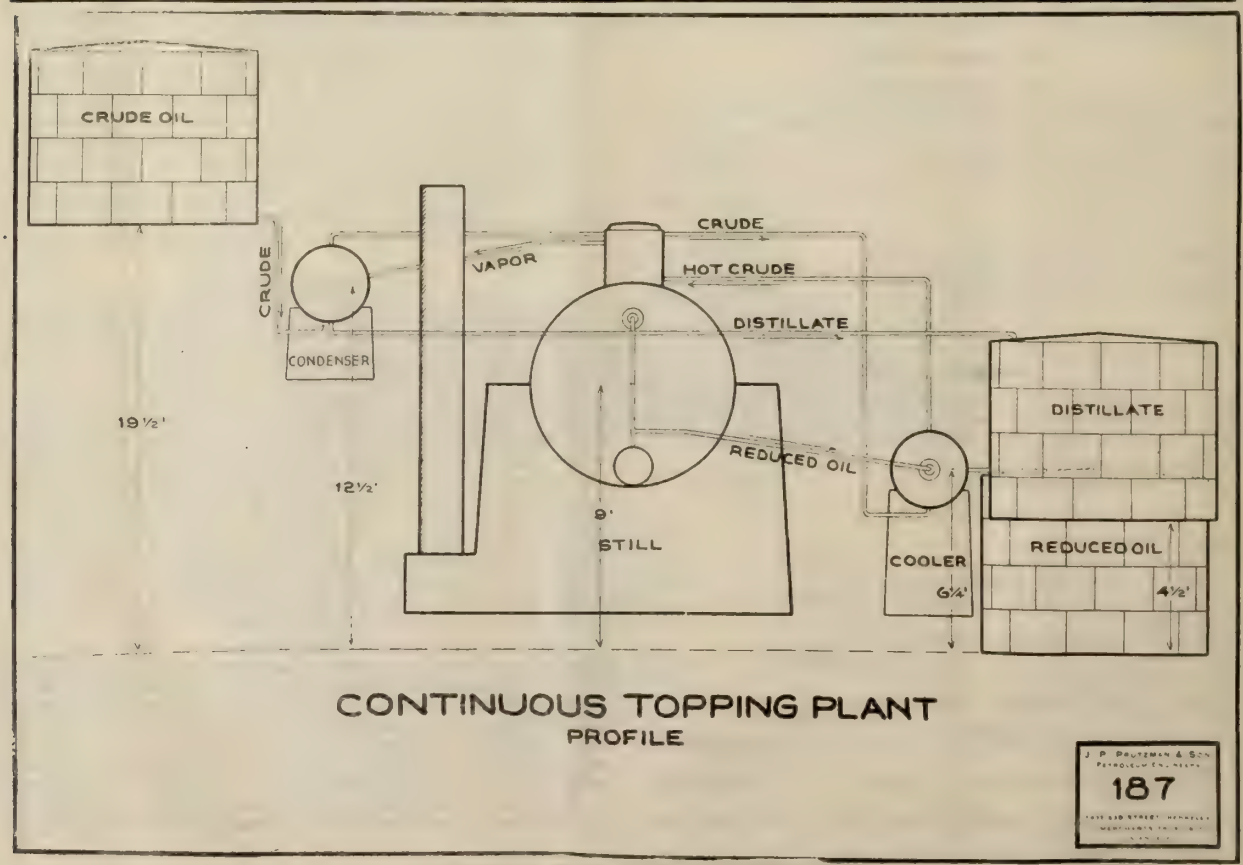
In the usual process of intermittent distilling, the capacity of the set is greatly reduced by the fact that actual distillation is taking place but a small part of the time. For a hundred barrel still, the figures would be about as follows:

Starting with a hot, empty still, filling takes place from 15 miutes to an hour, or an average time of perhaps half an hour. Fires are then started and the still. heated up to the point where distillation commences, taking say four hours. With oils inclined to froth, a period of very slow distillation follows, and even with a clean oil a delay of an hour for getting out the water would be a fair allowance. After the bulk of the water is off, a period of four hours for taking off twenty per cent of distillate would be an average figure. Next the reduced oil must be drawn off, requiring at least an hour with a cooler of the size shown. And finally the still must be steamed down for at least half an hour before refilling.

This gives us a total of eleven hours, of which four hours, or only 36 per cent, is the actual distilling time. Now assuming that in the continuous process we could distil as rapidly as in the old process (which is certainly very conservative, when we consider that in the continuous process the still is but half full at any time, giving a large swelling place, and that the rate of firing is very much lower) we would reduce the same quantity of oil in four hours as the old system would handle in eleven hours, distillation going on constantly at full speed, and the other operations, filling, heating and cooling, going



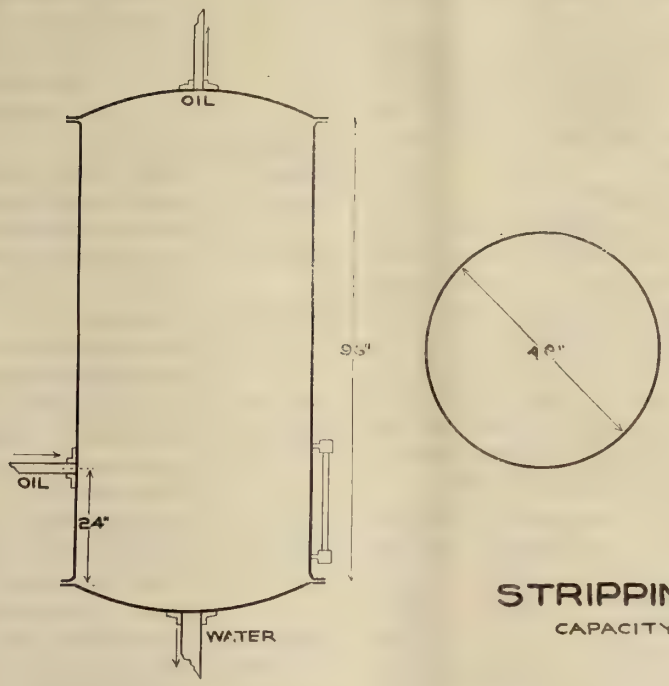
CONTINUOUS TOPPING PLANT
LAYOUT PLAN



CONTINUOUS TOPPING PLANT
PROFILE

(Continuous Topping Plant—Continued)

J. P. PRUTZMAN & SON
PETROLEUM ENGINEERS
188
1334 63D STREET, BERKELEY
711 MERCHANTS TRUST BLDG
LOS ANGELES



STRIPPING TANK

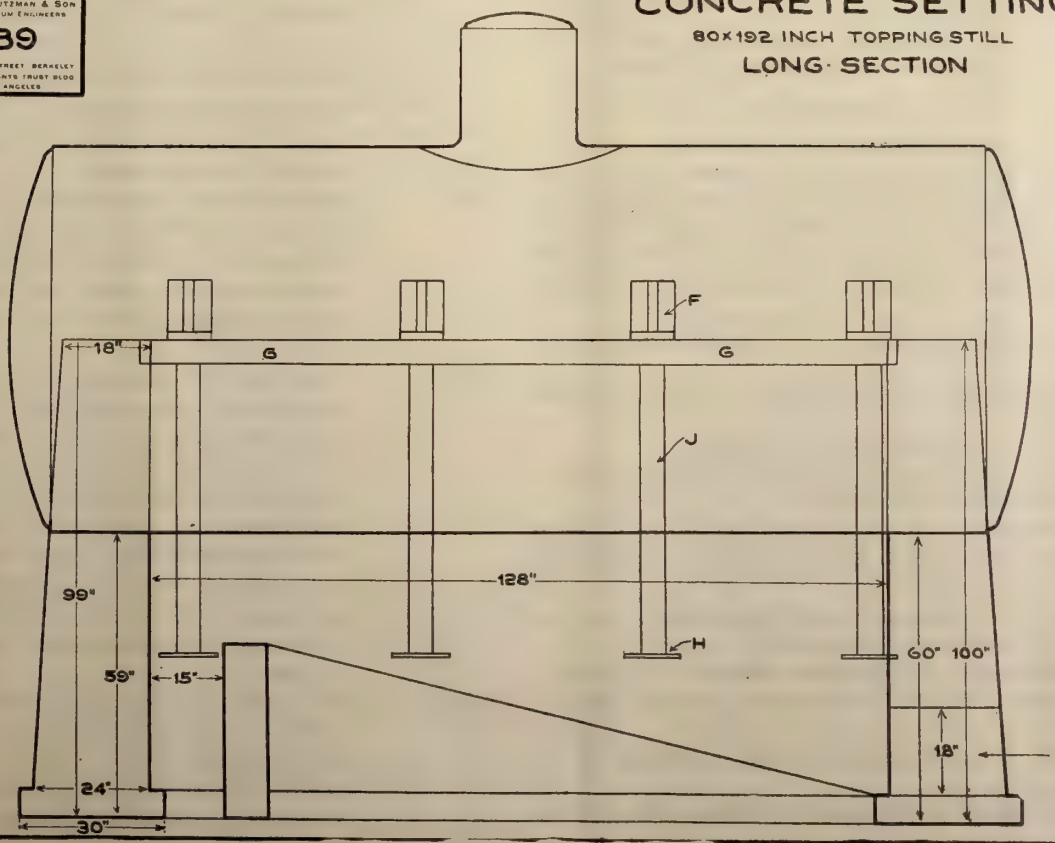
CAPACITY 750 GAL.

J. P. PRUTZMAN & SON
PETROLEUM ENGINEERS
189
1334 63D STREET, BERKELEY
711 MERCHANTS TRUST BLDG
LOS ANGELES

CONCRETE SETTING

80 x 192 INCH TOPPING STILL

LONG SECTION



on at the same time in other parts of the set. Or, a set which would handle on the intermittent plan 220 barrels of crude per twenty-four hours would handle, if arranged to run continuously, 605 barrels.

Both these rates are perhaps somewhat high, as they assume favorable conditions so far as quality of the oil is concerned, but it must be said that less favorable conditions, such as a very wet oil, would retard the work of the old set more than that of the continuous set, and thus make an even better comparative showing for the latter.

Cost of Plant

The cost of this continuous set is slightly larger than that of a 100-barrel intermittent plant, but the cost per barrel daily output isvery much lower. It will be evident enough that the cost of such a plant, even figuring on exactly the same equipment, will vary greatly with location, as labor and freight, in particular, are very essential items. The following, however, should not come far from the actual costs of the two plants, at a point accessible to railroad in the lower San Joaquin Valley, while at more favored points the cost would be some what less. The amount of tankage figured on could usually be very greatly increased with advantage.

Costs.	Intermittent	Continuous
Tankage (not less than)	$5,000.00	$5,000.00
Still	850.00	750.00
Condenser	300.00	400.00
Cooler	250.00	450.00
Stripping tank	.....	160.00
Still setting (approximate)	350.00	300.00
Still fittings	150.00	150.00
Condenser and cooelr settings	.....	100.00
Pipe and fittings (approximate)	1,000.00	1,000.00
Labor and freight	2,500.00	2,500.00
Total cost	$10,400.00	$11,740.00
Cost per barrel per day	$45.64	$19.90

This provides for the best material and equipment. By close economy the figures could be somewhat reduced.

PATENTS RECENTLY GRANTED

The following recently granted patents of interest to the oil trade are reported expressly for **The California Derrick** by J. M. Nesbit, Patent Attorney, Park Building, Pittsburgh, Pa., from whom printed copies may be procured for 15 cents each:

Well Drilling Apparatus—S. S. O'Connor, Santa Monica, Cal., 989,184.

Rope Eye for Well Drills—J. J. Horndon, Sharon, Kansas, 989,257.

Oil Well Control—J. E. Suits and R. B. Armstrong, Douglas, Ariz., 989,441.

Clamps—J. H. Gibson, Bruin, Pa., 989,499.

Swing Frame for Pumping Oil Wells—C. L. Heiseler and L. G. Neely, St. Mary's, Ohio, 989,708.

Tube Extractor—Thomas J. Boroff, Dayton, Ohio, 989,757.

Combined Friction Drive and Brake Mechanism—J. W. Green, Portland, Ore., 989,777.

Pump—R. E. L. Holmes, Aurora, Ill., assignor to The American Well Works, Aurora, Ill., 990,359.

Well Pipe Lifter, J. C. Rodebush, Oshkosh, Neb., 990,391.

Well Drilling Machine—J. W. Jennings, Quinton, Oklahoma, 990,743.

Oil and Sand Separator—L. W. Brown, Bakersfield, Cal., 990,800.

Well Discharger and Cleanser—A. S. Chivers, Beeville, Tex., 990,801.

SPECIFICATIONS FOR CONTINUOUS TOPPING PLANT

By Paul W. Prutzman

(See Foregoing Article)

SPECIFICATION 404

CRUDE STILL

Blue prints No.180-181-183.

Diameter	6 feet 8 inches outside.
Length	16 feet 0 inches on ring, 17 feet 6 inches over all. Heads bumped 9 inches over end of ring.
Dome	24 inches diameter, 24 inches high. Head bumped 3 inches.
Materials	Bottom sheet 7/16" "firebox" or "marine" steel, not exceed 50,000# tensile strength. Upper ring and dome sheets, and dome head, 3/8" boiler plate. Heads 7/16" boiler plate.
Layout	Bottom sheet full length of still, and not less than 8 feet wide. Heads in one piece each. Otherwise as convenient.
Rivetting	All single. Side seams 7/8" rivets, spaced 2 1/4" centers, all other seams 11/16" rivets, pitched 1 7/8". All rivets to be driven hot by hand or air hammer- bulldozer work not permitted.
Calking	All plates to be bevel planed before rolling, or chipped after rivetting, as preferred, inside and outside, and calked outside only. Calking must be done with a fulling tool of semicircular section, of not less than 3/16" thickness- no split calking permitted.
Fittings	On dome - 1- 4" pipe flange (A) On ring - 2- 2" " " (B and N) On rear head- 1- 2" " " (E) On manhole sleeve- 2- 2" pipe flanges (O and P) All pipe flanges of malleable iron or soft steel, rivetted in place and calked tight, without use of any cement or filling compound.
Lugs	Eight as shown (F) Cast iron or soft steel (pressed dimensions not less than 9" x 13". Flat face of lugs should be on exact center line of shell, and points on each lug 9" from shell must line to not over 1/16", measured vertically with still in its normal position.
Manhole	Manhole sleeve 15" inside diameter, length 24" from face of flange to end of shell ring. Of 3/8" boiler plate, rivetted and calked tight, and set flush with still bottom inside. At outer end to be flanged back 2 1/2", this flange to be reinforced with a false flange of same outside diameter, placed in two sections back of flange, and rivetted tight. Face of flange to be faced flat and true by turning or planing. Manhole plate of 1/2" boiler plate, bolted to sleeve by means of 15- 1/2" studs, fixed in flange.
Testing	Must be tested before shipping with 50# cold water pressure, and must not show any leaks after carrying this pressure three consecutive hours. Will be used to distil water and gasoline from crude oil, at a temperature of about 500° Fahr., nominal pressure, and must not show any leaks when first under heat.

SPECIFICATION 405

CLOSED TUBULAR COOLER

Blue Print No.183

Diameter	30 inches inside
Length	Over tube sheets 12 feet 0 inches Over flanges 14 feet 5 inches Over all 15 feet 0 inches
Materials	Tube sheets 3/8 inch boiler plate Shell 5/16" boiler plate Caps 7/16" boiler plate Tubes- charcoal iron boiler tubes of the best quality
Layout	No specifications
Riveting	All single. Shell seams 3/4" rivets pitched 1 7/8". Tube sheet seams 3/4" rivets, pitched 2". All rivets to be driven hot, by hand or air.
Calking	All seams to be bevel planed, or hand chipped, and calked outside only. Calking to be done with fulling tools only.
Fittings	On shell- 3- 2" pipe flanges (A-D-E) On caps 2- 3" pipe flanges (B & F) All flanges of malleable iron or soft steel, rivetted on, and calked tight, without the use of cement or filling compound
Caps	Bumped 3" on 30 inch circle, as shown. Shell to be flanged back 3", and cap bolted to flanges by 22- 7/16" stud bolts, set in flange on a 33" circle (F). Cap and flange need not be faced, but shall be carefully fitted, and fitting position plainly marked.
Tubes	137- 1 inch (O.D.) charcoal iron boiler tubes, of the best quality, rolled tight and beaded.
Testing	Tube chamber shall be tested, with caps off, to twenty pounds gauge, wet steam pressure, without leakage. End chambers shall be tested with caps on, using asbestos gaskets with oil and graphite, and shall be tight at twenty pounds steam pressure. Gasket must take up tight without undue strain on holding down bolts.

SPECIFICATION 406

CLOSED TUBULAR CONDENSER

Blue Print No.184

Diameter	30 inches inside
Length	Over tube sheets, 12 feet 0 inches Over flanges, 14 feet 5 inches Over all, 15 feet 0 inches
Materials	Tube sheets, 3/8" boiler plate Shell, 5/16" boiler plate Caps, 7/16" boiler plate Tubes, charcoal iron boiler tubes of the best quality
Riveting	All single. Shell seams 3/4" rivets pitched 1 7/8". Tube sheet seams 3/4" rivets, pitched 2". All rivets to be driven hot, by hand or air.
Calking	All seams to be bevel planed, or hand chipped, and

For Sale.—Slightly used oil well supplies. Write "D," California Derrick, for particulars.

Specification 406

Page 2

	calked outside only. Calking to be done with fulling tools only.
Layout	No specifications.
Fittings	On tube jacket- 2- 2" pipe flanges (B and E) On right cap- 1- 3" pipe flange (A) On left chamber 1- 1 1/2" pipe flange (C) 1- 2" pipe flange (D)
Tubes	37- 2 inch (O.D.) charcoal iron boiler tubes, of the best quality, rolled tight and beaded.
Testing	Tube jacket shall be tested, with caps off, to twenty pounds gauge, wet steam pressure, without leakage. End chambers shall be tested with caps on, using asbestos gaskets with oil and graphite, and shall be tight at twenty pounds steam pressure. Gaskets must take up tight, without undue strain on holding down bolts. To be used for censing vapors of gasoline, which pass through tubes, by means of cold oil passing through tube jacket. The slightest leak from tube jacket to end chambers will be cause for rejection.

SPECIFICATION 407

CONCRETE STILL SETTING

Blue prints No.182- 183- 183

Footings	To be 6" wider than foot of wall, and 6" deep. Must rest on hard virgin ground at all points- if soft spots are found, these must be cut out and filled with concrete, or if deep, with crushed rock thoroughly tamped.
Reinforcement	To consist of 3/8" iron (round) looped back and hooked at ends to form continuous rings at about the center of main walls. These rings shall be placed not more than 4" apart vertically. Where rods run into fire doors and other spaces they shal be bent back in T form, not less than 4" on a side, and carried to about 3" from opening. No vertical reinforcement nor any reinforcement in smoke flue walls (A-182) will be required.
Steel Work	Bearing bars (G) for lugs shall be of railroad iron weighing 60# to the yard, or of 5 inch I beam, 13 feet long. These shall rest squarely on pieces of 5" iron pipe about 5 feet long, which after placin shall be filled with concrete. The pipes shall rest on boiler iron plates, about 1 foot square, and not less than 3/8 inch thick, firmly bedded in wall. All these pieces to be firmly tamped in, and to be clean so that cement will get a good hold on iron.
Construction.	Concrete to be set in wooden forms, in the usual manner, and must be allowed to set at least two weeks, during which time it shall be wet down daily, before removal of forms. After removal of forms, all surfaces, inside and out, shall be trowelled smooth with a thin cement mortar.
Materials	Proportions will depend on materials locally available. Shall be such as to give a rich, strong mortar, free from air spaces. In placing this mortar, it should be thinned to a rather thin consistency, and worked down tight with very light tamping, beat with shovels.

Production for and Field Operations During March, 1911

Following is a complete list of the rigs and wells completed, wells abandoned and drilling, total wells producing, total production per field per month, total production of all fields in State, average daily production, average daily consumption, and stocks at the end of March. Our report is secured from the Standard Oil Company. It shows a great increase in production, general in all the fields, the greatest gain being in Midway, where the Lakeview gusher is again putting out close to 10,000 barrels of almost pure oil on the market, daily, according to a report direct from the field. The tabulated statement shows the exact condition in the fields at the end of March, and need no analysis. Same follows:

Field.	Rigs comp.	Wells comp.	Wells abd.	Wells drg.	Total wells prod.	Total prod.
Kern River	12	12	0	27	1,590	1,257,980
McKittrick	5	0	1	20	189	524,719
Midway	30	30	1	219	361	1,696,316
Sunset	6	4	0	62	184	479,539
Coalinga	16	16	0	110	716	1,513,973
Watsonville	0	1	0	1	4	3,720
Arroyo Grande	0	0	0	1	2	1,309
Lompoc	0	0	1	3	15	54,000
Santa Maria	0	0	0	38	146	700,556
Summerland	0	0	0	1	134	5,555
Santa Paula	3	0	0	29	257	35,256
Newhall	0	0	0	3	76	12,898
Salt Lake	2	1	1	10	261	244,890
Los Angeles	0	0	0	0	415	36,076
Whittier-Coyote	1	0	0	18	138	83,868
Puente	0	0	0	1	55	3,225
Fullerton-Brea Canon	4	4	0	42	240	436,084
Salinas Valley, San Benito	1	0	0	2	0	.....
Repetto	0	0	0	1	0	.....
Totals	80	68	4	588	4,783	7,089,955

Summary

	Barrels.
Stocks, February 28, 1911	33,688,468
Production, March, 1911	7,089,955
	40,778,423
Consumption, March, 1911	5,087,551
Stocks, March 31, 1911	35,690,872
Average daily production	228,708
Average daily consumption	164,115
Average daily surplus	64,592

Production for and Field Operations During April, 1911

Following is the first report to be issued showing the production and field operations as outlined above, during the month of April. This month, by waiting only a few days, we were able to get these figures before any other publication, through courtesy of the Standard Oil Company:

Field	County	WELLS: Rigs Completed During Month	WELLS: Drilling	WELLS: Producing	WELLS: Completed Dur. Month	WELLS: Abandoned Dur. Month	Production For Month
Kern River	Kern	16	21	1,591	21	.....	1,239,900
McKittrick	Kern	3	18	165	4	1	438,984
Midway	Kern	43	218	389	30	4	1,703,812
Sunset	Kern	16	65	185	9	.....	453,060
Coalinga	Fresno	17	112	679	9	2	1,412,481
Watsonville	Santa Clara	....	3	1	....	.....	3,600
Arroyo Grande	San Luis Obispo	....	....	5	....	.....	2,900
Lompoc	Santa Barbara	....	3	20	1	.....	64,300
Santa Maria	Santa Barbara	1	34	163	1	.....	717,570
Summerland	Santa Barbara	....	1	134	...	.....	5,150
Santa Paula	Ventura	3	33	259	1	1	40,707
Newhall	Los Angeles	1	4	76	....	.....	12,403
Salt Lake	Los Angeles	2	11	260	1	.....	227,366
Los Angeles	Los Angeels	....	....	415	....	.....	35,100
Whittier-Coyote	Los Angeles	3	21	137	1	.....	85,006
Puente	Los Angeles	....	1	56	....	.....	3,100
Fullerton-Brea Canon	Orange	4	48	245	1	.....	483,898
Salinas Valley	San Benito and Monterey	....	2	.....	....	.....	.....
Repetto	Los Angeles	....	1	.....	....	.....	.....
Totals		109	594	4,784	79	8	6,929,337

Summary

	Barrels.
Stocks, March 31, 1911	35,690,872
Production, April, 1911	6,929,337
	42,620,209
Consumption, April, 1911	6,095,113
Stocks, April 30, 1911	36,525,096
Average daily production	230,978
Average daily consumption	203,170
Average daily surplus	27,808

Dividend Notices

New Pennsylvania Petroleum Company will pay its twelfth monthly dividend of one-half cent per share. Books close May 5th. Payable May 15th.

Bear Creek Oil Company paid dividend of one cent per share, May 1, 1911.

United Oil will pay a quarterly dividend of three cents per share June 10th. Books close June 1st.

The Columbia Oil Company will pay one-half cent regular and one-half cent extra dividend on the 25th. Books close 18th, 4 P.M.

March Exports from San Francisco

During the month of March, 16,930,578 gallons of crude, napthas, illuminating, lubricating and parrafine, and residual oils were shipped from the port of San Francisco. The total valuation, $432,612.00, is distributed as follows: Crude, 6,049,650 gallons valued at $86,450; napthas, 30,328 gallons vauled at $5,645; illuminating, 8,469,722 gallons valued at $294,478; lubricating and parrafine, 15,383 gallons valued at $3,306; residuum, 2,365,585 gallons valued at $42,733. A gain both in quantity and value was noted in crude over the corresponding month of last year. A gain of 30,028 gallons and $5,607 was noted in napthas over last year. Gain of more than 5,000,000 gallons valued at twice last year's entire output, or decrease in price but increase in export was noted in the illuminating over March of last year. A loss of some 47,000 gallons at a corresponding loss in money, at a valuation almost constant, was noted in lubricating and parrafin. The increase in residuum was marvelous; from 220 gallons in March, 1910, it shot up to 2,365,585 gallons this March; from a value of $17 the residuum exports advanced to a value of $42,733.

April Exports from San Francisco

From the port of San Francisco during the month past, April, 1911, the following quantites of designated products with signified valuations were exported: Crude, 6,217,100 gallons valued at $88,833, an increase over 1910's April export of 2,694,205 gallons and $30,947 currency; napthas, 4,150 gallons valued at $605, a decrease of 14,255 gallons and $2,930; illuminating, 5,903,071 gallons valued at $204,925, an increase of 2,077,134 gallons and $53,925; lubricating and parrafin, 35,114 gallons valued at $8,763, a gain of 11,480 gallons and $2,774; residuum, 30,768 gallons, a gain of 28,136 gallons and $1,617 increase over the corresponding month of last year. Total number of gallons exported amounted to 12,190,203; total valuation thereof, $304,953.

Agency Forms Storage Company

After many months of high payments on the part of the Independents for storage in which to place their oil, a method of its profitable and reasonable distribution, in storage, has been decided upon in a manner declared satisfactory by a large majority of Agency members.

The disposition of the oil embraces the formation and fianancing of a storage company capable of caring for 14,000,000 barrels; 10,000,000 barrels of this amount will be considered as permanent storage, a reserve not to be touched for some years. The financing of the company, according to the Oil World, is assured. It will be on the following basis: Company will be capitalized for $5,000,000 with an authorized bond issue of $4,000,000. Bonds will carry eight per cent interest, or will be sold at a price which will guarantee that rate. Same to run ten years, optional with the company to retire them at end of three years at 103. Bonds to value of $2,250,000 will possibly be issued in the immediate future. Of this $1,000,000 will be paid the Union Oil Company for the 4,000,000 barrels of steel tankage for use of which Agency is now paying six cents per barrel per month. Remaining $1,250,000 to be used for construction of 10,000,000 barrel concrete reservoir storage. A total storage of approximately 19,000,000 barrels is planned. As soon as it is possible to run the Independents' oil into the new tanks, stock will be issued for the oil at the rate of twenty-five cents per barrel. All expenses will be paid from the regular monthly sales. Thebonds to be issued will be secured by the storage itself, the lands on which the storage is erected, the oil in storage and a guarantee of the Agency to make up any deficit that might occur, same to stand as a lien on the property of the Agency members. It is estimated that $7,000 will be saved monthly on payments for the 4,000,000 barrels carried in storage by the Union Oil Company. The estimated cost of the storage on the oil in the concrete reservoirs is one and seven-tenths cents monthly. It is planned to sell sufficient amount of oil out of the storage monthly, at the end of five years, to create a sinking fund in case the bonds have not been retired at that time.

The Agency is to all intents and purposes becoming more and more a great corporation, as the problems to be met in their effort to obtain a fair price for their oil is forcing the members into a closer and more intimate relation as time progresses.

Agency sales during March totaled 1,180,629 barrels, an increase over February sales of 223,629 barrels; increase due to the sales to Associated Oil Company. Price remained constant at 35 cents per barrel.

Union Oil's Bonds

At a meeting of the stockholders of the Union Oil Company, held a number of months ago, it was decided, as chronicled in this magazine, to authorize a bond issue of $20,000,000, for the purpose of developing the company's great properties and for general improvements. It is now reported that $5,000,000 of this issue has been placed in the East and in Europe, and that developments will soon begin. Manufacturing facilities, it is stated, will be greatly increased; storage likewise.

Standard Developments

Standard Oil is to build a large office building in San Francisco exclusively for the transaction of its own business, according to a report published recently in the San Francisco Chronicle. It is said that the structure will be called the Standard Oil Building. No news except that a lot was rumored to have been purchased, and that it would save the company $4,000 a month in rent, was given in the report.

We have excellent information to the following effect: Standard has closed a deal whereby it acquires almost a thousand acres of land near Los Angeles at North Manhattan Beach, with a great water frontage, at a price of approximately $600 per acre; a total investment, in case the figure quoted is correct, of $600,000. It is further stated that $3,000,000 will be expended on the erection and equipment of the refinery going up on this property, the pipe lines to be constructed and other improvements under consideration. Standard is also rushing work on the doubling of its pipe line from the Kern County fields to Point Richmond, and expects to have same completed by June 1st. Standard is contemplating getting a strong foothold south of Tehachapi and the Union Oil Company, which until recently has been in full control of the southern part of California, will have to look to its laurels. With a pipe line through which oil as well as natural gas can be transported, the Standard will be able to get oil from the Valley fields cheaply, refine it, and sell it at a reduction which will greatly cheapen the price to consumers. Standard is constructing immense storage tanks in Kern River, preparing for an enormous future business. On the whole, it looks as though Standard had decided to double its activities in this state.

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CALIFORNIA DERRICK

The Oil Authority of the Pacific Coast

Published Monthly

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Offices and Editorial Rooms

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Advertising Rates on Application

ANNOUNCEMENT

Beginning with this number the CALIFORNIA DERRICK will be issued on the twenty-fifth of every month and not, as heretofore, on the fifteenth. This change is due to the desire of the management to give to the readers of this magazine the best possible service, which desire can only be carried out by the change in the date of issuance, due to the fact that certain very important statistics are available between the fifteenth and twentieth of each month and not before that time. The appearance of the magazine on the fifteenth precludes our readers from getting these statistics at the earliest possible date, which is the reason for the change. Aside from getting these statistics to our readers earlier the new date of issuance permits us to give more news of the current month. Other features of the "Derrick" will remain the same.—THE MANAGEMENT.

Proof Incontrovertable

Some months ago we charged the **Oil City Derrick** of Oil City, Pa., with hurting the values of oil stocks on the exchanges by printing "knocking" articles about California oil investments in general. The Oil City paper denied the charge in a decent manner, but was puerile enough to make a weak disclaimer to any relation to the **California Derrick** which they imagined might result through this magazine having the same name. We do not claim any relation to the Oil City paper. Our pages throughout our history will show where we stand in regard to the Oil City Derrick; and certainly they will show we have sought no relation with that paper. But we have a charge to substantiate: that the beforementioned paper has hurt oil values. Oil men have to be shown; facts, not words, count. Take then, such of you as have ever seen the Oil City paper (providing you have looked at it and have preserved it) and scan every California item thoroughly. Scan particularly every mention in regard to the Independent Producers' Agency; editorially and in the news columns that agency has been attacked. Every discouragement which could possibly be placed before the eyes of the agency has been attempted. Every seed of dissention which it could have been possible for the Oil City paper to try to sow, has been sown; so far, without fruit here, for the California Independents know what they wish, and have confidence in themselves and each other, and do not look to outsiders, subservient outsiders, whose one wish is their discouragement and dissolution, for advice or for salvation.

We request that the files of the Oil City paper be looked over carefully, by those who have time, or remembered by those who have been attacked. If the paper in discussion can ever be found to have said a good word for the Independent Producers' Agency, it will have to be shown to us before we will believe it. Their files show one attack after another; insidious and open. Now, the result of the attack on this Agency would naturally be to lower the values of the stocks of the various companies forming said Agency, would it not? And when, as is the case, these companies **comprise the majority of all the independent companies in the state of California,** is it not **proved** that attacks such as have been made have hurt the oil values as a whole? As the small stocks are practically the only ones which have suffered on the exchanges, it looks pretty much as though the big production were by no means the only "bear" in the market. "Knocking" has been a material factor in aiding the stocks of the smaller companies, listed and unlisted, down the toboggan. It is true that considerable speculative money has been recently invested in Nevada mining stocks, and also true that fakers and "overproduction" have hurt the oil stock market; but we must affirm once more the charge originally made; the proven valuable stocks of many of the smaller oil companies of California have suffered through "knocking" by Eastern papers and Western papers also and that the Oil City Derrick has helped them down by continued hammering of the Independent Producers' Agency. Inasmuch as the Agency comprises companies controlling in a large measure the production of the state, the Oil City Derrick has materially harmed the oil values of the California oil industry. It is an incontrovertable fact.

Characteristic Mendacity

We give herewith a letter from Postmaster Arthur G. Fisk, of San Francisco, which conclusively disproves false statements recently made against the California Derrick. The letter follows:

Post Office, San Francisco, Cal.
Office of the Postmaster

May 22, 1911.

C. C. Wright, Editor and Publisher,
"California Derrick,"
649 Pacific Bldg., S. F. Cal.

Dear Sir:

Replying to your communication of May 18th:

I wish to inform you that no application has ever been made for admission of the "California Derrick" to the second-class of mail matter at this office. I may say, however, that at times inquiries have been made as to the requirements requisite for entry of the publication. It appears, however, that the former owner of the paper did not wish to be hampered in the number of copies circulated free for the benefit of the advertisers, and preferred to pay postage at the third-class rate until such time as the free circulation would be an inconsiderable quantity.

Respectfully,

ARTHUR G. FISK.
Postmaster,
J. M. C.

We might add to this that the "copies circulated free for the benefit of the advertisers" became an "inconsiderable quantity," when the present management acquired this magazine.

In accordance with the policy (we will dignify it by calling it a policy) of the backers of the promotion sheet of the almost unknown Shell Petroleum Company, and the little Mawrus Shell Company "stock specialists," and whatsoever other concerns one W. N. Shell, of Los Angeles, is interested in, the statement was made in the little promotion sheet referred to that the California Derrick was a "house organ," that it had lost the second-class mailing privilege "many moons ago," "several years ago," etc., etc., for the sole purpose of defaming this magazine, we having told damaging truths concerning their organ. They then resorted to absolute falsehood in regard to the California Derrick. The above letter from the Postmaster of San Francisco shows their responsibility. It is a most unpleasant duty to point them out as prevaricators (they deserve the shorter and uglier term), pure and simple, but, inasmuch as they have never deviated into sense or decency, we feel fully justified in showing them up.

Their promotion sheet, issued from the Lissner Bldg., Los Angeles, office and telephone number as Morris Shell and Shell Petroleum, has sought to cover their own operations under attacks upon "fakers," real and otherwise, and to boost the shell game. Their hypocracy and utter unreliability being herewith shown up, the public need no longer be "bilked"; nor need pay any attention to operations of so immaterial and so despicable a character. Any charges which they may make through their little sheet from now on, in the light of the exposure herewith made, must of necessity fall flat. They have been caught in the act of lying for purposes of defamation; and no credence, under such circumstances, can be placed in statements issuing from such a source.

N. B.—These people are now advertising "1000 per cent. profit" to "investors" in Los Angeles papers. And they cant at "fakers!"

New Magazine Will Help California

The Chamber of Commerce of San Francisco is issuing a splendid little magazine, the "Chamber of Commerce Journal," for the good of California's commerce. Volume 1, issued in April, presented many features of excellence, one of them being an article by Capt. Wm. Matson, President of the Chamber of Commerce, entitled, "California's Commercial Outlook." The article was exceptionally well written, being very interesting and to the point. The article occupied the front page and provided a fitting introduction to the first issue. "California's Contributions to Commerce" showed that during the year 1910 said contributions amounted to nearly $500,000,000. The "Convention League" was shown to have brought approximately 125,000 persons to San Francisco through their efforts during the past year. A classified list of members of the Chamber of Commerce is given in the Journal, and also a list of the foreign connections of the Chamber. Big statistics are given, and, for the reason that the magazine is not a "boom" paper, it should be of great benefit to all California, and especially to San Francisco.

Time to Buy Oil Stocks

Great financiers such as Harriman, Jay Gould, and their like have stated many times that the psychological moment to purchase stock is when the stock slump has been in evidence some time, or at least, when stock which has had a high price bid for it, is commanding a greatly reduced price merely because the rest of the market is dull; that is, providing the stock has a value behind it which will cause it to recuperate on the exchange. If such is the case, the time to buy oil stock is surely now. Oil stocks, listed oil stocks of proven valuable companies, stocks paying good dividends at the present time, are selling, in some cases, for one-third of their actual value, for approximately one-third of what they have commanded on the market. Col. Timothy Spellacy recently said that Mascot oil stock was worth, intrinsically, $5.00 a share. It has sold recently at $2.10, while paying a higher rate of dividends than almost any other company on the market at the present time.

Premier, awhile back, sold down to $.61. Col. Spellacy will tell you that Premier is worth $1.50.

Palmer oil took quite a drop recently, for no cause. Associated is low at present, compared with the values shown by its annual report. Numberless smaller companies show very depressed stock values. In fact, although the market outlook for oil is splendid, and though the Agency is to store its surplus oil and take it off the market entirely, interest in oil stock is slack these days and good stocks are actually begging.

It is not our purpose to induce the purchase of stocks; we are merely pointing out a self-evident fact, to-wit, excellent stocks are very low at present. Great capital is taking over the control of a number of companies and options are held on both the properties and the stock control of other companies. Outsiders see their opportunity and are taking advantage of it. The money to be made in oil stocks in the future, seems, at present, likely to go to the big man, who is getting in now, before the next stock craze—(for stock crazes are periodical)—to get out when the craze places a double value on his purchase of the present time, only to purchase later on, when a return of lower prices has come around. But probably there will be no prices lower than those prevailing.

"Fakers" in Other Lines

The State Mining Bureau caused the arrest on May 13th of F. W. Ford, of Los Angeles, a mining promoter charged with issuing a false prospectus. This serves to show that California Oil is not the only industry with leaches attached to it, but that parasites cling to all great industries, which is what we have maintained constantly, although the particularly loud outcry made by our oil magazines and papers against "fakers" has in a large measure driven out such from the oil business, while at the same time attracting much more attention to this side of the industry than it merited. There are really very few faking companies in the oil business in California, in our opinion. It has been too hot for them.

To Help the Stranger

It would be of material advantage to the stranger within your gates, Oil Gentry, if all of you would follow a custom which is taking fairly firm hold in the various west side fields, to-wit, placing a sign board in a conspicuous place with the name of your company painted thereon. This would save hours of still-hunting, in the aggregate, on the part of strangers desirous of locating such and such a lease, inasmuch as almose all leases look alike to the stranger. There are always some strangers. In addition to this, your company would derive considerable advertising by the sign board. But the main reason for a sign board is to let the whole world know where your company is located. It wont cost much and will help a great deal. Try it and see.

Map of Coalinga

Mr. "Joe" Loeb has a map of the Coalinga oil fields which is very complete and satisfactory up until time of last correction. Mr. Loeb presented us with the map and it is an excellent one. It shows wells drilling, wells abandoned, water wells, oil, etc., and roads, railroads, pipe-lines, Los Gatos Creek, Jacalitos Creek and the town of Coalinga. The map is corrected to August 15, 1910, and although that is some time since, and changes in ownership have taken place, it should be of great value and convenience to those interested in Coalinga. The map was drawn up and compiled by C. C. Van Valkenburg, Jr., and R. F. Holser, and was copyrighted by Joe Loeb and F. H. Dailey. The lettering is very plain, the section lines show up well, and a good idea of the "lay" of the field can be obtained from it. It is large enough so that every letter is discernable; small enough to be conveniently carried in the pocket. Mr. Loeb has the maps on sale.

THE DEHYDRATION OF PETROLEUM ACCOMPLISHED BY ELECTO-CHEMISTRY

Science and Development Walk Hand in Hand

Readers of the **California Derrick** have been made acquainted with the problems confronting oil refineries in the determination of the amount of water in solution with oil, through the excellent writings of both Professor Edmond O'Neill, Dean of Chemistry at the University of California, and Mr. Paul W. Prutzman, Petroleum Chemist for the State, connected with the State Mining Bureau.

Under the title "Water in Crude Oil." Professor O'Neill wrote a most interesting series of articles, brief but very much to the point. We were shown how water mixes itself into an emulsion with oil; an emulsion which it has been found very hard to separate, and which, therefore, until recently has been a total loss to the producer and refiner alike.

Today, owing to the experiments which have been conducted both by Professor Cottrell of the Universtiy of California and Mr. Buckner Speed, of rifled-pipe-line distinction, and also to the indefatigable work of several associates, the problem of absolutely separating the emulsified water and petroleum has been solved. The solution of the problem of dehydrating the crude oil to an extent both practical and remunerative for all parties concerned was brought about by a process subjecting the crude to a treatment in which electricity is the main factor. The subject was studied for some three or four years and its successful outcome marks an epoch in saving the valuable constituents of our California oils. The process removes all water from the oil, also all the so-called "B. S." and other foreign matter, without detracting from or altering the character or value of the petroleum in any way. It allows a flow of the oil from the well to the run tank, saving the large loss by evaporation and seepage, which some oil men have estimated as high as from 10 to 25 per cent per month, according to local conditions. Above all, the process restores the true Beaume gravity; that is, raises the gravity of the oil treated.

Early in the year 1909 the Lucile Oil Company, on Section 6, 21-15, Coalinga, erected the first practical plant for the purpose of dehydrating crude oil by this process. We believe that this successful plant was given some attention in the **Journal of Electricity, Power and Gas**, and that considerable attention was directed to it through the article appearing at that time. Following this an experimental plant was installed on the property of the Western Union Oil Company, Santa Maria; here the problem of handling rebellious coast oils containing as high as 75 per cent water in complete emulsion was worked out. Then followed the installation of a standard plant on the property of the Pacific Oilfields, Ltd., a British company located near Lompoc. This company is successfully treating oil at the present time, but it was found that the rebellious coast oil, carying as it did a large water content, did not lend itself to treatment by the process so signally successful in Coalinga, for which reason a series of experiments were carried on, resulting in a very material improvement over the original process.

Not feeling capable of giving this remarkable achievement of electro-chemistry the proper description it should receive, we are endeavoring to secure the services of our friend, Mr. Paul W. Prutzman, in order that he may describe it from the viewpoint of a disinterested observer. Knowing the exactness and care with which Mr. Prutzman performs whatsoever duty he undertakes, we feel sure that if we can only secure the proper amount of time from him, the process will receive ample and just consideration in these pages. In case this undertaking is beyond his power at the present time, owing to his many engagements, we will be enabled, through the courtesy of the Petroleum Rectifying Company, the owners of the process, to run an article by one of their own staff describing fully every interesting feature. We expect to be able to give our readers this article in the June number.

Vast Future of California Oil Business

While the oil business in this State is today probably in the healthiest condition it has ever attained, with a footing more stable than ever before, with oil the demonstrated fuel of the whole Pacific Coast and all that region West of the Rockies, we yet wish to point out the fact that the home market is by no means the only market; California oil is to be world oil. We have here today the vastest proved supply of oil known in existence. Mexico looms a close second, with its Titanic gushers; but a second. California is first. Gushers have never, except in this State, produced for any great length of time to the material benefit of their owners. In California we have an entirely different state of affairs. Gushers here have produced and do produce to the great financial benefit of the companies possessing them. There are, so far, no evidences of a Dos Bocas here. The Lakeview is again producing pure oil in great quantities. And the oil will undoubtedly be profitable; enormously so. Then there are the Palmer gushers, very profitable wells indeed. The Doheney wells in Midway, the Midway Premier, the Pioneer Midway, the Honolulu wells, the Sage wells, the Mammonth and the various Satndard gushers have all been profitable, while at the same time increasing the storage. This storage should not be a matter of great concern. Every year, for the past few years, the consumption of the last year has been greater than the production of the year previous. Today we are confronted with the fact that California oil is to be a world commodity. British, French and Eastern capital is rushing into California to get a strong foothold. The reailzation that oil is the coming fuel **exclusively,** for the navies of the world, and that oil will also be the exclusive fuel, in the not far distant future, of the great ocean going steamships, and that railroads East as well as West, are adopting oil for fuel; and that the consumption of gasoline, distillate, etc., refined from oil, is increasing to a point where it taxes the utmost limits of the refineries; these, and other lesser known facts tend to show that an almost incomprehensible demand for petroleum and its products is only a matter of a few short years.

While there is a great deal of oil in storage, from the viewpoint of the past, there is very little in storage from the viewpoint of future supply. There isn't enough California oil above ground at the present time, to supply the present demand for more than eight months, if for that length of time. It is for this reason that those who know are rushing into the business of producing California oil; of securing properties from which oil can be produced. When the Panama canal is opened to business there will be a tremendous increase in traffic between the Atlantic and Pacific, and when fuel oil is available to ship owners of the Atlantic, they are going to take advantage of it, so that a world market will be opened.

Bakersfield's West Side freight rate case has been entered before the railroad commission at San Francisco by President N. R. Solomon of the Merchants' Association and Attorney E. J. Emmons. A date has not yet been set for the hearing, but same will take place in Bakersfield. Merchants and manufacturers of Bakersfield allege discrimination against them on West Side freightage.

The so-called Mattole "field" in Humboldt County is to be wild-catted for the purpose of discovering more oil.

The United States Geological Survey has issued a bulletin on natural gas of great interest, showing Pennsylvania to have lead all states in output since earliest production.

A bill passed by the last session of the California Legislature provides a penalty for the unnecessary waste of natural gas from gas or oil wells. The act is worded in such a manner as to be most drastic to offenders. Upon application we will publish the act in full.

A RED HOT LETTER FROM MR. J. E. BREITWISER
He Makes a Strong Objection to Claims of Another Company

Mr. J. E. Breitwiser, mineral oil engineer, of Los Angeles, who has written some very good matter for the **California Derrick,** including a description of the new Breitwiser all iron Rotary-Standard Combination well-drilling machine, has written us a letter which sizzles more or less with charges of a nature not too pleasant for the other fellow. It will be remembered that in the last issue of this magazine there appeared a write-up of the "Zierath" Combination Drill Company's machine, in which we stated:

"There was recently given in this magazine a description of a new combination Rotary-Standard well-drilling device, similar in many respects to the "Zierath," which we are glad to give space here for the general information of the oil public. A write-up of this nature is open to any reader of the **California Derrick** who has patented an article of real and genuine value to the oil business, and we request others to send in their information for publication."

We do welcome information of any bona-fide new device which will aid the oil men of California in their business, and will always be pleased to give them publicity; we cannot possibly know, however, the various contentions which arise over the patenting of an idea of value, and in this instance we feel it only right to give publicity to the letter which our esteemed friend Mr. Breitwiser has written. Same follows:

Los Angeles, California, May 5, 1911.

Mr. Editor:—In your recent issue appeared a descriptive article and cuts of a drilling rig which was heralded as a Combination Standard and Rotary drilling rig that is an entirely new thing. I desire to give you true facts, with your permission, as to the origin and start of the combination idea, and call your attention to the fact that the idea is at least ten years old in California. And further to the fact that the California Derrick of San Francisco in February published cuts of a combination rig of my own which it would be egotistical for me to compare with this later.

But I believe I have the right to give real facts without in any way knocking this newer inventor. In fact I hail with delight any new invention, and trust our good friend Mr. Zierath will live long to make many more improvements in drilling machinery, for surely there is plenty of room for improvements. The problem of well drilling was an acute one ten years ago, as it is today, because of the treacherous and widely different stratification of the formations in California; and no rig used prior thereto seemed to be the thing. Soft mud, heaving dry sand, water gravel, wet flowing sand, shells, cement caps, rock and shale followed each other in so rapid and unaccounted order that no one rig, whether Standard, Rotary, Hydraulic or Prospecting was adapted. To remedy these difficulties was the discussion, and I designed a machine which used either the Standard or the Rotary tools at will, in the month of July, 1900, and made and installed the machine in September of that year at McKittrick. This machine was followed by a number of others in 1901, and descriptions of it with cuts were published in every oil paper and in the oil columns of all the dailies in San Francisco, Los Angeles, Bakersfield, Fresno, Hanford and in Eastern oil papers as well.

This machine was installed in a derrick already built and drilling by the Standard method. It had in addition to the full Standard tools and iron calf wheel, water swivels, hydraulic pump and full rotary machines. The first ones used J jaw clutches and sprocket chains such as have since been used on Imperial and Ideal rig irons, and slightly modified, used on the Zierath machine. These I abandoned because they would not take hold or let go without stopping the engine and because they broke so easily and took hold or let go with a jerk. Then I followed with an end thrust, V-shaped, wooden block friction, which was somewhat of an improvement, and made several of these. And then came on the oil panic and low prices and I went to the wall, tramping San Francisco and Los Angeles over trying to get operators to put in something better than a wooden bull wheel, tarred string rope transmission rig; but during this entire past ten years I have been talking combination rig and showing my drawings, etc., in these cities, until I marvel that any man would claim to be the original inventor, at this time, of the combination idea or machine; especially in the very town where I have been doing this.

But these ten years have been spent at odd times designing further improvements until, as shown in your recent article from my pen, we have a machine all iron throughout, running with sprocket chain and operating with friction clutches that takes hold as slowly, as quickly or as easily as desired and holds so tightly that the engine stops or the derrick comes in or the casing pulls in two. All the band wheel, bull wheel, calf wheel and rope delays are done away with once and forever, and every part is ready for instant action by throwing a lever. In addition we have a new low down Rotary that is but eight inches above the floor and runs with all its gearing under the floor, so there is no chain across the floor in the way, while the grip rings and top strip off much more quickly than I have written it, and thus the Rotary is always in position to run without removing it and still is in no sense in the way of the Standard tools when they are being used. Besides this we are now making bull wheels, calf wheels, sand reels, all running on shafts in babbitted boxings and operating with friction clutches mentioned above. All this came from the original combination idea of 1900.

The Oil Well Supply Company are making these improvements now and any other reliable maker can license them as well if desired. So we predict that wooden arrangement of either Standard or Rotary rigs are a thing of the past and welcome again our friend Zierath or any others to the fold of inventors. Only don't let them claim to be the original combination crank. That's me. Respectfully yours,

J. E. Breitwiser."

Present Condition of the Oil Industry in Mexico.

A Brief Description of the Tampico Oil Fields

By ALLEN G. NICHOLS

The "Tampico Field" is used in a general sense in this description of the Mexican oil fields, because all of the oil region so far developed in Mexico, or at least practically all of it, is tributary to the port and city of Tampico.

The Highways of Tampico

Generally speaking, the country is bisected by two great rivers, the Panuco and Tamesi, which join just above the city of Tampico, and a great lake or inland arm of the sea known as Laguna Tamiahua. Into this lake run a great number of rivers, most of them having a sufficient depth of water for a moderate sized steamer. There are also many smaller rivers running into the two larger ones before mentioned, so that nearly all of the developed properties can be reached by water transportation from Tampico.

Pipe Lines and Storage

The pipe lines already built have their terminal at this point and most of those now projected reach tidewater at or near the city of Tampico. The great refinery of the Waters-Pierce Company, already employing some seven hundred men, is located on the river just below the city and opposite the tank farm of the Huasteca Petroleum Company. At the latter place there are about forty steel storage tanks already completed, most of them of 55,000-barrel capacity each, and one big reinforced concrete storage reservoir, having a depth of twenty-four feet and a capacity of over 1,000,000 barrels, is already practically finished.

At Ebano, the Mexican Petroleum Company are just completing a storage reservoir of the same kind and capacity, though at this place most of their product is delivered directly to the railroads, who are their principal customers. Another new pipe line is projected, practically parallelling the Panuco River, that will serve as an additional outlet for the oil produced in that section between Panuco and Tampico.

Panuco and Topila Active

It is in this section that much of the new work is now going on. Following the bringing in of the two gushers at Panuco and Topila by the East Coast Company there has been a considerable demand for land in this now proven region. The ease with which the land can be reached by water has also been a strong factor in the popularity of this particular section of the country. The great Panuco River, hardly ever less than 2,000 feet broad and with an unlimited depth of water, furnishes a splendid highway by which material may be delivered or the product of the wells sent to the waiting consumer.

New Companies Interested

Among the new companies going into this district are the Mexican Premier, the United Oil Company of Mexico, the Texas Company, Tampico Oil, Ltd., a British company, and the Scottish Oil Company, all of whom have property along this river and at least two of which are already drilling. The United have lately procured a very desirable tract of some 4,000 acres, lying directly on the Panuco River between Panuco and Topila and will be drilling as soon as material can be placed on the ground.

Developments at Present Date

The Tampico Oil, Ltd., an English syndicate, are already drilling two wells on a part of the Tampico Fruit Company's ranch, and have encountered their first oil in both wells. Leonard and Mount, associated with the Texas Company, are drilling two wells at the same place and have already completed one well which is good for several hundred barrels, at a depth of about 600 feet. These wells are being put down in the neighborhood on some very large seepages, so large in fact, that they have given the locality its name "Laguna De Tamos," meaning "The Lake of the Place of Bones;" and although it is not a lake at the present time, it is undoubtedly the bed of an old lake.

Further north there are several companies working in the Los Esteros country, and several wells have been brought in at a comparatively shallow depth. Several of these companies are very strong combinations holding great tracts of land. One of them, the Texas-Mexico Company, have about 1,000,000 acres in one holding, and in their first well have already struck oil.

"Region of the Great Gushers"

To the south of Tampico is the region of the great gushers belonging to the Pearson's and the Huasteca Petroleum Company, and most of the wells so far brought in in these sections have been drilled by one of these companies or by the old Furbero Company, still further to the south. At the present time, however, there are several strong companies shipping material into the southern country, and within the next few months it will present a scene of great activity.

The Dos Bocas

Of the four great gushers already brought in, two at least have been world-beaters, and one of them, the Dos Bocas, ruined not only itself but the country immediately surrounding by the uncontrollable force by which the oil and gas were shot from the well. This was caused by the fact that as usual the unexpected happened and the well came in a veritable volcano of oil, spouting some fifteen hundred feet high, catching fire within a few minutes from the boiler, and forming a pillar of smoke and flame 2,000 feet high that lasted for fifty-four days. That fire was probably the most terrible in the history of all oil conflagrations. At the end of fifty-four days water had broken in to such an extent that the fire was finally extinguished, but the "Dos Bocas" had long since lost its identity as a well. It still produces an enormous quantity of hot salt water, and some oil, but none has ever been saved.

Huasteca Company's Gusher

The two gushers of the Huasteca Company at Juan Casianos have either been better behaved or better handled, and the first one, No. 6, has been finally shut in, while No. 7 is partially under control but is still producing at the rate of nearly 30,000 barrels per day. This well has been handled in a very scientific manner and great credit is certainly due Mr. Wylie and his lieutenants for the skillful way in which the work has been performed. Two pipe lines have been laid from the well to a point several hundred feet up the mountain, and the force of the gas and stream of oil is allowed to expend itself against the side of the mountain, thence running back into a large reservoir, from whence it is pumped into the receiving pipe. It was at one time necessary, before the completion of the pipe line, to burn hundreds of thousands of barrels of this oil, because there was no place to store it and no possible way to stop it.

TAMPICO, THE CENTER OF ME

Photos of the region of the greatest gushers known in the history of the oil busine

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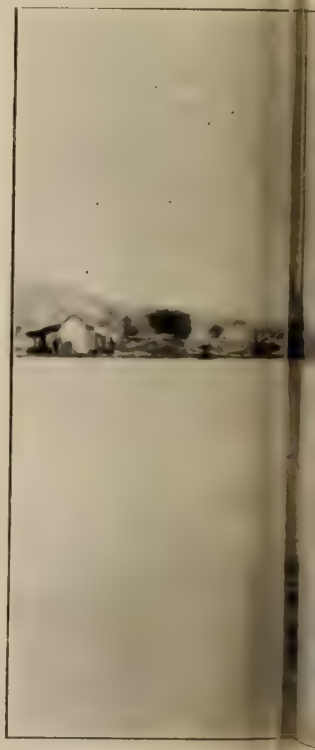

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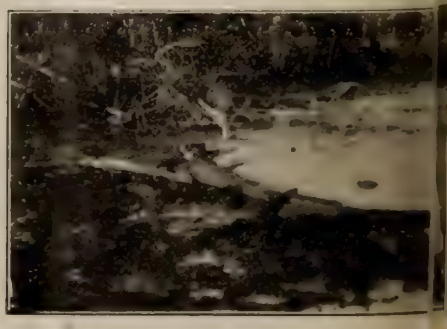

No. 1, Port of Tampico, one of the finest shipping ports in the world. Considered "THE" oil port of the future. No. 2, Caracol Well No. 2, of the Tamp
Fruit Company, on the Panuco River. The rivers of the Tampico region afford remarkable shipping facilities, being both wide, deep and long. No. 3, Huasteca p
line crossing the La Laja River. No. 4, "Leonard Mountain," camp of Leonard and Mount and Tampico Oil, Ltd., in Laguna de Tamos. No. 5, Huasteca Petrole
Camp at Juan Casiano, the black spot on the hill back of the first house in the foreground indicates the discharge of Well No. 6 (the gusher) against mountain si

ICAN PETROLEUM ACTIVITIES

ort of Tampico—Shipping and transportation facilities—Photos by Allen G. Nichols

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(S Article). No. 6, All that remains today of the world-famous Dos Bocas Gusher; a lake of boiling salt water. No. 7, The great gusher of the Pearson's, taken fro a distance of three-quarters of a mile, while gushing in excess of 100,000 barrels of oil per day. No. 8, A seepage in the Juan Felipe, Spellacy & Thompson prop- ert to extreme right may be seen man approaching as close as anyone would care to get without covering himself. No. 9, Lighthouse and quarantine station, Tampico Ba notice tropical foliage. Center, one of the gushers that go to enrich the shareholders of the Doheney Companies.

At the preesnt time it presents a very peculiar appearance. The derrick has been taken down and the entire well covered to a depth of several feet with concrete, on top of which there is a mound of earth to absolutely preclude the possibility of fire. Great gate valves keep a back pressure of some six hundred pounds per square inch on this well at all times. Just how much it would flow if the valves were opened to the full extent it is impossible to conjecture, but certainly a good deal more than at the present time.

The Pearsons' Huge Well

The great well of the Aguila Oil Co., better known as the Pearsons', is located at Llano del Portero, distanced possibly twenty miles in a direct line from Juan Casiano. This well came in during the latter part of last year and outside of the Dos Bocas was probably the most spectacular well ever drilled. For months all efforts to harness the monster were unavailing. Rivers were filled with oil and every low place, every swamp and lake became a reservoir, but fortunately it never took fire. It is likely that this well produced an average of 100,000 barrels per day for at least four months, but it has at last been capped and shut in, so that at the present time there is almost no loss, and while much of the oil has been lost there are at least two tremendous reservoirs, each of which are thirty feet deep, filled to the brim with the greatest steam raising agent in the world.

World's Great Operators in Tampico

For the past few months Tampico has been the Mecca towards which were bent the steps of some of the best known oil operators of the world.

California has sent her full quota and among them are men whose names have been synonomous with the developments of most of the California fields. Men like Doheney, Canfield, Bridges, the Spellacies, Thompson, Graham, Kingsland, Montgomery and scores of others have cast their fortunes in the new fields and have secured smaller or larger tracts in various portions of the country. The Spellacies and J. D. Thompson have been in the country off and on for several years past. Mike Spellacy has been there almost constantly the last three years. They have gathered up large holdings carefully selected, in various parts of the country and a short time ago most of their holdings were syndicated to form the Mexican Premier Oil Company, already working at several points.

(To be Continued)

The Katalla, Alaska, Oil Fields

Submitted to the California Derrick by Wm. T. Prosser

"Redwood" Well, Katalla, Alaska. Named after Sir Boverton Redwood.

Wells 2 and 3, Katalla, Alaska, producers of high-grade oil.

Transporting Oil in Alaska on Barges
A more or less hazardous method.

Developments in the new Katalla, Alaska, oil field are attracting much attention, especially in the Northwest, but as well in the California petroleum districts. Shipments of the northern oil to the refineries of California are promised before the end of June, or at least in July, for by that time the steel equipment for conveying the oil and storing it for shipment will be in place.

Three tanks are in process of erection; one a 30,000 barrel reservoir located on Kanak island, in Controller bay, from which tank ships will be loaded; a second containing 5,000 barrels on the mainland just before the pipe line crosses the flats to the island; and a third, of 2,000 barrels, at the wells, some eight miles around the harbor from the big tank. The pipe line is almost all in place. The steel for the tankage was made in Los Angeles, at the Llewellyn Iron Works, and arrived at Katalla April first.

Four of the producing wells in the Katalla district have been measured to flow 2,100 barrels of oil a day, and oil is standing in a fifth well. These are on the property of the Amalgamated Development Company, a Canadian and American concern which obtained possession of about 91,000 acres of land in the oil belt within the last year or two. The wells were drilled several years ago, but their value was never known to the public, for a conflict of interests arose that put development work at a standstill.

The oil belt extends along the coast for many miles to the eastward of the Copper River Delta. Much of it is low and marshy, but seepages of petroleum are numerous on the higher ground. It was Tom White, a pioneer prospector and hunter, who fifteen years ago discovered oil in the Katalla district. Indians had told him of strange black pools in the forest, but he did not think much about the phenomenon until he was bear hunting one day, and after wounding a bruin, was pursuing him across a meadow. He almost fell into a miniature black lake. The surface was dried, but beneath, the material was about the consistency of molasses.

White staked the first oil claim on that meadow, and still is in possession. He worked with the crew that drove the first wells on the other property, and declares that never yet has a drill penetrated the real oil sand. None of the producing wells are more than 1,500 feet deep. With the opinion of experts to guide him, he expresses the belief that a gusher would be found 1,000 or 1,500 feet deeper.

The two best producing wells are located on patented ground, this being about the only piece of patented land in the district. Dr. H. T. Burls, of London, England, made two visits to the district eight or ten years ago, and in collaboration with his associate, Sir Boverton Redwood, (knighted for his services to the oil industry), made a report that was comprehensive and of great value. He indicated the locations at which oil would most likely be found, and the first four bores produced it. The fifth was stopped by the warring interests before a sufficient depth was reached.

Katalla oil is very volatile. Its percentage of gasoline amounts to as high as 38.5, while the kerosene is about 31 per cent, and the remainder is lubricating oil, paraffin, etc. It is of a paraffin, not an asphaltum base.

ASSOCIATED OIL ISSUES ANNUAL REPORT SHOWING SPLENDID CONDITION. GREATEST YEAR IN HISTORY OF COMPANY—NET EARNINGS TOTAL $2,454,213.41. NO DIVIDENDS YET.

The annual report issued to the stockholders of the Associated Oil Company, showing the present standing and business transacted by the great corporation and all affiliated companies has just been issued, and displays a splendid record for business done the past year. Following is the introductory statement made by W. S. Porter, vice-president and general manager of the Associated:

To the Stockholders of Associated Oil Company:—We submit herewith combined annual statement of the Associated Oil Company and the following proprietary companies: Associated Transportation Company, Associated Supply Company and Bakersfield Iron Works, for the year ended December 31, 1910.

The earnings, after deducting all expenses for operations, maintenance and transportation were		$4,108,065.46
Less:		
Interest on bonds	$ 438,558.40	
Depreciation reserve, reinvested in the business	1,215,293.65	1,653,852.05
Net gain for the year added to the surplus		$2,454,213.41
Of this amount we set aside for redemption of proper pro rata of outstanding First Refunding Mortgage bonds	$ 578,038.60	

The statement as submitted includes the gain of the Associated Oil Company and its proprietary companies, as well as dividends received from affiliated companies. Earnings of affiliated companies, not declared by them as dividends but carried to surplus, are not included, as will be shown by an examination of the detailed statements of such affiliated companies, submitted herewith:

NEW DEVELOPMENT

During 1910 we completed 61 wells, as follows:

Kern Field	45
McKittrick Field	14
Coalinga Field	2

ACQUISITION OF PROPERTY

During the year 1910, we acquired the following described lands:

Section 35:

This property consists of the north east quarter of Section 35, Township 31 south, Range 22 east, Midway district, on which we have drilled a well which is producing 150 barrels of oil per day.

McMurtry Lands:

This property consists of 1,440 acres, known as the McMurtry lands in the Midway field. We consider it practically proven property by reason of the development done by other companies in the vicinity thereof. At the present time we are drilling two oil wells and one gas well on this property.

Elk Hills District, Kern County:

We acquired by lease of mineral locations 3,200 acres of land in what is known as the Elk Hills district, North Midway, on which we are now drilling 13 wells, the deepest of which has penetrated the oil formation. These wells are being drilled for the purpose of acquiring title to the land. Under the terms of our leases we have the option to purchase this land at a reasonable price.

Lost Hills, Kern County:

The Associated Oil Company has acquired by direct purchase and under option, 29,100 acres of patented land in the vicinity of the "Lake Shore" well, Lost Hills district. This well was brought in early last summer. It is a shallow well 530 feet in depth and is still producing oil at the rate of 300 barrels per day. We are drilling a well farther out on the formation, for the purpose of proving the value of the land acquired, which has now reached a depth of 2,245 feet.

Pioneer Midway Oil Company Consolidated:

We have acquired seventy-five per cent of the capital stock of the Pioneer Midway Oil Company Consolidated. This company owns all of Section 30, Township 31, Range 23 east, Midway district. The original owners of this property drilled a well, which at the time of our purchase was producing approximately 5,000 barrels of oil per day. This well is now flowing about 800 barrels of oil per day. We have six additional wells on this property in process of drilling.

MISCELLANEOUS

During the year the Associated Oil Company moved its operating headquarters from McKittrick to the Midway district and will use this point as a base for the operation of properties in the Midway and Elk Hills districts.

The steamer "Wm. F. Herrin," a sister ship to the S. S. "J. A. Chanslor," has been added to our fleet. This vessel is on her maiden voyage from the Atlantic and should reach San Francisco the latter part of May. Immediately upon her arrival she will be employed in carrying oil to Portland and Seattle, at which points we have recently taken contracts to supply fuel to the Oregon and Washington Railroad, North Bank Railroad and the Great Northern Railroad.

EARNINGS

The earnings of the company have been greater during the past year than at any time in its history. The opening of new oil districts during the year has made it possible for the company to acquire additional lands at advantageous prices, and the great increase in its business has made it necessary to extend its transportation and distributing facilities.

W. S. PORTER, Vice-Pres't and Gen'l Mgr.

The report shows in detail the following:

Disbursements of Associated and proprietary companies, including balance to profit and loss, totalled $22,963,155.49. Actual amount disbursed in transacting business was $18,086,447.66. Sales and other revenue totaled $22,079,631.21. Dividends from other than proprietary companies, $305,447,68. Sinking fund contributions and earnings, $578,038.60. Reduction in market value of oil is given as $329,373.67. Other items charged to profit and loss are: Adjustment of claims prior year's business, $55,462.17; marine loss, 1909, $15,550.81; abandoned pipe line surveys, $8,533.90.

Total assets of the Associated Oil Company and proprietary companies are given as: Associated Oil Company, $61,441,809.67; Associated Transportation Company, $5,294,667.64; Associated Supply Company, $1,166,815.52; Bakersfield Iron Works, $330,-291.47. Total liabilities of Associated and proprietary companies are given as: Associated Oil Company, $56,526,176.98; Associated Transportation Company, $4,858,360.41; Associated Supply Company, $1,138,241.71; Bakersfield Iron Works, $142,030.05. Depreciation reserve and balance to credit profit and loss not given in liability figures just quoted.

Reports of the disbursements and receipts, assets and liabilities of the Pioneer Midway Oil Company, Consolidated, the Sterling Oil and Development Company, the West Coast Oil Company, California Coast Oil Company, Amalgamated Oil Company, Salt Lake Oil Company of California, and the Arcturus Oil Company, all Associated companies, are also given in full.

Following are the names of the directors of the Associated Oil Company: O. Scribner, F. H. Buck, R. P. Schwerin, E. T. Dumble, W. S. Porter, Burton E. Green, Guy Shoup, Wm. F. Herrin, J. A. Chanslor, John C. Kirkpatrick, Rudolph Herold,

Jr. The general officers are: Wm. F. Herrin, President; W. S. Porter, First Vice-President and General Manager; O. Scribner, Vice-President and Assistant General Manager; J. A. Chanslor, Vice-President; G. Sheridan, Secretary; W. A. Sloan, Treasurer. The executive committee consists of the following members of the directorate: W. F. Herrin, chairman; W. S. Porter, F. H. Buck, John C. Kirkpatrick, R. P. Schwerin.

Time and again it has been declared that with the issuance of their yearly report for 1910 the Associated would declare a dividend, but although the company appears to have $752,000 in cash available, and nearly a million dollars additional coming from its subsidiaries in dividends, at the present time there is no allusion to a dividend by the company in the report to the stockholders. While no dividend is declared, however, the stockholders have every other possible reason to be pleased with the report, which shows the company in splendid condition.

Rumors of the sale of the Associated are still thickly flying, without a vestige of corroboration. While it seems certain that foreign interests are dickering for, if they have not already purchased the control of the company, we have no authentic information in regard to this matter and do not believe any other oil journal possessed of such, inasmuch as the information, in case there were any to be given out, would be given to all the papers simultaneously.

SUGGESTIONS FOR THE CONSIDERATION OF THE INDEPENDENT PRODUCER

Col. "Tim" Spellacy's Idea in Regard to Storage and Price of Oil

When, on a recent trip to the Midway oil field, the editor of this magazine had the pleasure of dining at the Mascot Oil Company's property, the subject of the present oil situation in this state, as far as it affects the Independent Producers' Agency, was brought up, and Col. Spellacy made an extempore speech in which he gave voice to views of interest to the independents. The editor asked Colonel Spellacy if he would object to being quoted, and the Colonel replying in the negative, we give herewith a verbatim statement of the latter's views:

"With the Independent Producers' Agency controlling the output of 50,000 barrels of oil per day, the key to the oil situation of California is in their hands; having something like 10,000,000 barrels in storage, a part of which is going out each month and from the sale of which they receive a monthly income, there is no reason why they should replace the oil taken from storage with oil produced from wells from which they receive no dividend, but upon which they are charged at the rate of 25 per cent per year upon the cost of the tankage in which it is stored.

"By withholding the 50,000 barrels production per day, it would necessitate, to supply present demands, the drawing of 30,000 barrels per day from stock. This would make a difference of 80,000 barrels per day on the market; 50,000 barrels absolutely new production and the 30,000 barrels less oil on hand, taken from storage. This action, within ninety days, would remove the claim of the purchasers of oil that they were compelled to buy oil at less than its value because of the expense necessitated by the building of new storage; and when the present oil in storage is removed, the oil could be furnished direct from the property at a much better price than now received. It is much better to sell 50 per cent of the production at a fair price than the entire production at one-half the price which should be received.

"By so doing they would strengthen the position of those disposing of oil on the market, by enabling them to contract with the consumer with oil that is not a drug on the market. In the history of the past we find that regardless of the amount of oil in storage the market price of oil was advanced with rapidity as soon as outstanding stocks began to be reduced. Since the earliest days of the oil industry there have been periods when oil was produced in greater quantities than the market required, and other periods when there was a shortage. The main object of the Independent Oil Producers' Association should be exercised during the periods of over-production by withholding the surplus and thus maintaining the regular value, as the market fluctuations of the value of oil make it a more or less hazardous business, inasmuch as a property value depends entirely upon the price received for oil sold therefrom.

NEWS FROM THE WHITTIER FIELD

The Richards Granger well on the extreme northern side of the Puente Hills, between Whittier and La Habra, is down about 2300 feet, showing much gas and some oil.

The La Habra Oil Company, on the old New England lease, has a splendid showing at about 2900 feet, but just as the well was finished and about to be put on the pump a cave at 2170 feet collapsed the casing and the hole is being swedged in an endeavor to straighten it out.

A rig is being built by the Fullerton Oil Company on its property adjoining the Union Oil Company's Chandler Canyon lease on the south. The latter company has just spudded in the second well on the Chandler, the first well (started over a month ago), being down about 1000 feet.

The Murphy Oil Company in its No. 26, is down close to 3700 feet. The usual productive stratum of sand was found at 2700 feet, but the management decided to make a deep test of the territory and went on.

The Canadian Pacific Oil Company is down about 1900 feet with well No. 11 on the Warner lease.

The Anchor Petroleum Company, on the Worsham tract, is down about 1200 feet, but experiencing considerable difficulty in getting through the mixture of loose sand and boulders. A circulator is being used.

About 300 feet north of No. 8 the Whittier Crude has graded for No. 14.

News from the Coyote Hills

In the Coyote Hills the Union is down about 4000 feet in the San Juan well with 8¼-inch casing. The same company on the Bastanchury is close to 2000 feet with well No. 3. Bastanchury No. 1 was 4400 feet deep.

The Whittier-Des Moines Oil Company is down 3480 feet where the 4½-inch casing will be cemented in an endeavor to shut off the water.

News from the La Habra Valley

The Amalgamated Oil Company has spudded in on Anaheim No. 2 and is building the rig for No. 3. No. 1 is producing about 600 barrels of 16 degree oil which is now being moved through the new 6-inch line to the Union's pipe-line.

The Graham-Loftus Oil Company will shortly commence drilling in the flat close to the Amalgamated. This company has some 1200 acres in this tract and which was not included in the recent sale to the Delaware Union Oil Company.

The Syndicate Petroleum Company, near the mouth of Brea Canyon, is down about 4500 feet.

Santa Monica Mountains, "Lucky" Baldwin's Venture

The Ramera Oil Company, operating in the Santa Monica mountains, is now down about 1500 feet, but experiencing a lot of trouble with the 7⅝-inch casing.

This well was started some four years ago by the Santa Monica Oil, Gas & Mining Company, an Arizona corporation, organized by T. H. Brewster and the E. J. Baldwin interests, and is upon a portion of several thousand acres of land that was located in 1900 as mineral claims by the people named. This territory is considered absolutely "wild cat," but it appears that ample evidence can be found in the way of indications to either condemn it or recommend it as one sees fit. However, the promoters have resorted to the heroic method of proving the land by drilling.

The Ramera Oil Company took over the interests of the former company some two years ago.

Who's Who in the California Oil Business

A Record of Great Personal Achievement

A GEOLOGIST, practical metallurgist, oil man and cement expert, the discoverer and great expounder of the present method of cementing off the water in oil wells in California, Thos. Hayes, formerly of Coalinga, has been appointed General Manayer of Development and Production of the Burmah Oil Company, Ltd., owners of yreat tracts of oil lands in Burmah, Persia, India and Eyypt, a company which compares in size with either the Union or Associated Oil Companies of California.

The Burmah Oil Company, Ltd., is financially one of the stronbest oil corporations backed by European capital in existence. Its possessions in Upper Burmah are very larve, and have been broupht to a hibh state of development, there being more than 2000 producing wells o ntheir properties there. The oil produced from these wells is of a paramn base, running from 2 per cent. to as high as 17 per cent. paraffin. At Rangoon, Burmah, the company has a large and well equipped tool shop and a great refining plant, capable of refining 27,000 barrels of oil per day. This refinery is one of the most modern and most scientifically handled refineries in the world. The buildings are large and in thorough keeping with the magnitude of tne company. At Calcutta, there is a large distributing plant and from this point the ocean steamers of the company load for the sea ports along the India coast, and for Japan, China, Egypt, Arabia, Africa, and the Continent, doing the largest business in refined oil in that section of the world. The company further has a 10-inch pipe-line 375 miles in length, with numerous gathering lines extending to the various sources of supply, all feeding the big refinery at Rangoon. On the Irawaddy River the company operates five river steamers which distribute the necessary supplies to the various great properties in the interior. Steam and electric launches are numerous; in fact, the company is a favorable one, which point we are bringing out to show just how much confidence is placed in Mr. Thos. Hayes, and the California method; for the latter enters greatly into the success of Mr. Hayes, the foremost oil well cementing expert in the world.

THOS. HAYES

Geologist, Metallurgist, Oil Man and Cement Expert

The Burmah Oil Company, Ltd., was experiencing great trouble. The methods in vogue in the development of their far Eastern properties were not bringing satisfactory results. Water broke into their oil formations and a heavy gas pressure was experienced in many of the wells. The science of cementing the water off was not understood and they had nearly ruined some valuable territory. At this point it was decided to send engineers to the California oil fields to investigate the methods in general use here. The engineers came, saw and reported most favorably upon the perfect California method of shutting off the water with cement, which method was perfected by Mr. Thos. Hayes. A thorough investigation of the geological conditions in California showed them similar to those in Burmah, and the result of the investigation was an invitation to Mr. Hayes to visit the various properties of the company in the Antipodes, to have him make a personal investigation of the conditions there, in his own manner, and report his findings. This he did, and he went further, for after studying the formations and the logs of various wells he showed that the water troubles could be entirely overcome by cementing the water off to perfection. This work demonstrated that geologically the Coalinga and Burmah fields are very similar.

After having studied the Burmah properties to his own satisfaction and having proved to the entire satisfaction of the engineers of the company his ability to put their wells in excellent condition, Mr. Hayes made a report to the directors of the company at the home office, in Glasgow, Scotland. Without much ado Mr. Hayes was appointed to the responsible position given above, General Manager of Development and Production. Mr. Hayes was very well fitted for such a high position. His early study of geology, always a favorite subject with him, and his experience in the metal mines of old Mexico and South America, and his study of the chemical properties of cement, in relation to cementing off water from the wells, gave him an especial equipment for just such a place as he now occupies. Mr. Hayes is a well known man, being a member of the United States Geological Society and the United States Geographical Society (both of Washington, D. C.). He was a close student at one time with Mr. George D. Louderback of the University of California, and associates. His first chance to prove the practical value of his study of cement came when S. A. Guiberson, Jr., of Coalinga, invited him to conduct some experiments upon several wells on the property of the Associated Oil Company. This he did, finding the exact chemical action of the cement in the waters encountered in the bottoms of the various wells where the tests took place. A number of tests were also made on the surface and the result of all this work was a wonderful process for shutting off the water. When called upon to cement a well he first secured the log, studied it carefully in order to be familiar with its every detail, and, knowing its history, proceeded on a scientific principle. He met with success from the start. On several occasions he set the cement in hot sulphur water, mixed with oil, at the bottom of the well, where the water had broken in, saving good wells which are still producing oil without a trace of water. His method of cementing off the water was immediately adopted in Coalinga and its use in California today is widespread. This is the method to be used in Burmah.

Mr. Hayes' success brings considerable success and business to others in California. It also takes good Californians away from this State, for twelve picked men from among the California drillers were sent to the Burmah fields, also a rotary expert to investigate the formation with the end in view of installing the latest improved rotary system of drilling oil wells where loose sand has made it difficult for the cable tools. Not only this; the company maintains an office in Coalinga, of which Guy H. Salisbury, an oil man, is in charge as agent, representing Mr. Hayes during his absence in Burmah. One of the striking results of Mr. Hayes' appointment to his new position is the decision on the part of the Burmah Oil Company, Ltd., to use the tools which are especially Californian in their construction. This decision came about through the Burmah Company's seeing that California tools were superior, and a very large order was placed for California special casing, a casing which takes the place of the drive pipe, the line pipe and the thin Boston casing of the early development days of California. It was only with the advent of the tools especially adapted to California conditions that the successful drilling of deep wells was made possible here. Such improvements as "California Special" casing, "Ideal" rig irons, and the "Double" under-reamer have received the adoption of the Burmah Company to the extent of a substantial order placed with the J. F. Lucey Company.

The methods and tools used in the Far East were discarded years ago in the California fields, and the new methods and the new tools, with the California men handling the "Special" casing, will be a revelation to the Burmah operator and will mark the beginning of a great era in the development of that country.

Of all the banks in the country, the Bank of Coalinga was designated by Mr. Hayes as the medium through which the company's business will be handled in the payment of oil well supplies that will be purchased in this country. The bank was selected by Mr. Hayes not because he is a stockholder in it, but because he knew it was conducted along conservative lines, by very conservative men, and was safe.

All the supplies that go to the Far East are California supplies. They are the very latest tools, casing, wire lines and general oil well supplies purchasable in the market and their selection is truly a great compliment to California.

The success of Mr. Thos. Hayes brought with it a lot of prosperity for other California oil men.

GENERAL NOTES ON CALIFORNIA TOPICS

Graham & Loftus Sell Fullerton Properties

Messrs. Graham & Loftus have sold their Fullerton Properties, comprising some 973 acres of practically proven property, with 38 producing wells, two wells drilling and three new rigs, to Eastern and foreign capitalists for a sum said to approximate $1,400,000. The production of the property is given as 35,000 barrels of oil monthly, contracted to the Associated Oil Company for a period of three years from last September at a flat rate of 70 cents per barrel. The first payment on the property has been made. A new company will take over the holdings under the name "Delaware Union Oil Company," and continue development under the direction of J. M. Danziger. It is announced that Graham & Loftus will develop their property in the La Habra hills, comprising some 1,200 acres.

Good Well in Fullerton

The Menges well, Fullerton field, is producing close on to 6,000 barrels of oil daily and is said to be the best well ever struck south of the Tehachapi, in California.

Invitation to Miners

State Mineralogist Lewis E. Aubury has extended an invitation to the American Association of State Geologists, on behalf of the miners of California, to meet in San Francisco in 1915 during the Panama-Pacific Exposition.

Map of Ventura-Newhall Fields

The State Mining Bureau has issued a splendid map of the Ventura-Newhall oil fields, located in Los Angeles and Ventura counties. The map is 8 1-2 by 3 feet and sets forth the positions of producing, drilling and abandoned wells. The price of the map is $1.30, with postage, $1.50. Railway lines and roads are shown on the map, making it easy for a stranger to gain an idea of the facilities for reaching properties.

Oil Leads California Minerals in Value

According to the State Mining Bureau the returns from the various mineral industries of the state for the year 1910 will aggregate $100,000,000.00, petroleum leading the list with an approximated valuation of $32,398,187, and gold following a distant second, valued at $20,237,570.

Supreme Court Upholds Reserves

The Supreme Court of the United States has upheld the constitutionality of the establishment of the vast forest and other reserves, including the petroliferous lands, for any national and public purpose and has declared that the Federal Government and not the state governments shall have the control thereof, proceeding upon the principle that "the nation is an owner and has made Congress the principal agent to dispose of its property." Thus is another loophole through which selfish interests might obtain power over the vast resources still remaining to the Government stopped up forever.

Large Withdrawals

Total oil lands withdrawn from public entry by the Department of the Interior on April 1, 1911, aggregated 3,795,548 acres. Total acreage in California withdrawn from entry, 1,594,332 acres, or more than one-third of the entire petroleum acreage reserved.

Interesting Fuel Facts

The United States Government and State Government of New York desire the discontinuance of the use of coal in locomotives passing through their forest reserves.

The Ray Consolidated Company's smelter at Ray, Arizona, it is stated, will use 60,000 barrels of fuel oil per month. The Nevada Consolidated Mining Company will also use California oil, displacing coal, at its Steptoe plant, said to be the largest copper plant in the world.

California fuel oil does not deteriorate when stored. Coal does.

One hundred and sixty-eight gallons of fuel oil are equal to one long ton of the best bituminous coal, according to J. Krutt schnitt, director of maintenance and operation of the Union and Southern Pacific railroads, which companies now operate on their lines 1,171 oil burning locomotives, and which have ordered 46 new oil burners. The A. T. & S. F. Railway Company is operating 842 oil burners and is changing its coal-burning engines as fast as possible. The Northern Pacific is operating 20 oil burning locomotives in the heavily wooded section of Oregon, and the Great Northern Railroad is now converting 115 coal burners to oil consumers, and is also constructing a large storage tank, capable of holding approximately 166,000 barrels of oil.

All this and further information is given in a recent issue of the Oil, Paint and Drug Reporter, which concludes with the following paragraph:

"With economy and safety to its credit the future of oil as the fuel for locomotives wherever it can be procured at a reasonable price is well assured."

Two Corrections

In our last issue we reported the news that "Guy H. Salisbury has been called to New York"—Mr. Salisbury did not go, but before we had heard of it from him the "Derrick" was out. The editor was in the oilfields at the time, which was the reason the Santa Maria news appeared under the Sunset-Midway-McKittrick heads along with the West Side news. The only excuse we have to offer is: "Mistakes will happen."

Natural Gas in Trinidad

The island of Trinidad, according to the United States Geological Survey, is well supplied with natural gas, large supplies of which are reported to be going to waste. This gas, if piped to Port of Spain, would undoubtedly be a great source of revenue. The gas is under great pressure, the discharge from a well at Guayaguayan being said to be about 1,000,000 cubic feet a day. Every oil well drilled on the island thus far has produced large quantities of gas in addition to the oil. —U. S. Geological Survey.

Rear Admiral H. I. Cone has stated that every vessel which the Navy Department may build in the future will be equipped to burn oil, either as an auxiliary fuel or exclusively.

J. E. Kerr, promoter of the High Gravity Oil and various other companies, who quoted Christ extensively in extenuation of his acts, his favorite being, "Father, forgive them, for they know not what they do," is being sued for $24,475. Mis representation, it is said, caused the suit, and it is further asserted that when the trial comes off, if the case comes to trial, the biggest fakes in oil stock selling since the Burrs received their "coup de grace" will be disclosed. We have no further knowledge of the affairs of the High Gravity. Russell R. Dorr is the main plaintiff.

The holdings of Slocum Brothers, near Piru, Ventura field, are declared to be under option to an English company.

An oil and gas company has been organized to drill for said commodities at Elsinore, Riverside County.

A report that the Shell Transportation Company will engage in the business of producing oil has been denied by a repre sentative of that company, Mr. F. P. S. Harris, who is visiting California at present.

J. Kruisheer, representative of the Rothschilds of London, has been visiting California. His presence here at the same time that J. A. Moffett, vice-president of the Standard Oil Company, was also on a tour of these fields, was given con siderable comment.

The News from This Field is Written By
GUY H. SALISBURY—Ca'ifornia's Best Known Oil Correspondent

UNITED STATES GOVERNMENT INTERVENES

Present Status of the Southern Pacific Case

Word has been received from Washington, D. C., that Attorney General Wickersham has appointed B. D. Townsend, who successfully tried the Oregon case before Judge Wolverton, as Special Counsel to represent the Government in the investigation into the alleged frauds in the railroad land grants affecting lands held and claimed by the Southern Pacific Company. Francis J. Heney, of San Francisco, will co-operate with Mr. Townsend in the trial of the case. The clause in the grant under contention excepting and excluding from the grant all mineral lands, save coal and iron, will enter largely into this investigation. The Oregon case, just concluded in Judge Wolverton's court, was similar in a way to the present case—that is, dealing with the grant that takes in the lands within the Coalinga field, with this exception: in the Oregon case the grant was made to Holloway, et al., in 1866; in 1869 the Government inserted the "bona fide purchase clause, wherein the lands granted were to be sold to "bona fide purchasers." This was at the urgent request of the Oregon Legislature, as it was desired, on the part of Oregon, to people the state. The Court held that the Government had the right to insert this condition. The decision turned in favor of the Government on this clause, as the railroad people had ignored the "bona fide purchaser, as well as selling lands at a greater price than $2.50 per acre. With the grant affecting the lands in the Coalinga district, the clause "excepting and excluding all mineral lands wherever found," save coal and iron, was a part of the original granting act, having been inserted therein by Senator Cornelius Cole, who is now a resident of Los Angeles County, and who made a hard winning fight for this "exception" on the floor of the Senate. This act, with the exception as worded, and the further fact that the matter of the grant was rushed, was railroaded through Congress, prevented the Government from making a thorough investigation of facts in this mineral exception, which left that part of the grant still hanging in the Department of the Interior.

The original fight against the Southern Pacific Company, affecting the lands in the Coalinga field, was inaugurated by the locators who organized themselves into the United Development Company, George D. Roberts, president. The case coming up before Judge Hilborn, in Los Angeles, on "striking out the Bill of Complaint," was won by George D. Roberts, et al. The Southern Pacific Company then filed a demurrer to the complaint. This was heard before Judge Ross, at Loss Angeles, who decided in favor of the Southern Pacific Company, the judge ruling that no one except the Government, or some one in privity with the Government, could maintain an action against the Southern Pacific in the question pending. The attorney for the United Development Company, Francis J. Heney, filed an amended complaint in the United States Circuit Court, at Los Angeles, which is still pending.

The Attorney General has been watching this case for some time, allowing B. D. Townsend, who has been acting as Special Counsel for the Government in the Oregon case, to make the leading arguments against the demurrer at Los Angeles, that the Government might be advised as to the merits of the contention before the court. Firts Assistant Attorney General W. N. Miles was a representative of the Government at the hearing of the demurrer. The attorneys in the case have a national reputation that assures the people that their case will be well taken care of.

Blair Well, Due to Come in Soon, Closely Watched

The Blair Oil Company, Section 14, 21-15:—The 10-inch casing was landed at 2378 feet in first-class condition, and the water cemented off. The cement plug having been drilled out and the bit carried two screws, or about eight feet past the 10-inch shoe, the well was bailed down and from all appearances the water is shut off. The 8¼-inch string is being set in. The manager expects to enter the first oil sand, a strata supposed to be eight feet thick, from the surface outcrop, in about 20 feet. This sand will be tested to ascertain its true value. The pay sand will be entered at about 2650 feet. The south field has been slow to come in, and this well is now being watched very closely, as a strike would make a lot of new territory look "good." The sands here are in front of the Bohemian sands and are on a different pitch. The manager claims a sand similar to the producing sands of the west side, as the formation is checking up with the logs of the American Petroleum, on Section 30, 20-15.

Canadian Interests Busy—British Coalinga

The Canadian interests in this field are not wavering in their efforts towards development. The British Coalinga, Section 16, 20-15, are now 2800 feet deep with well No. 1, 8¼-inch casing, free in the hole; formation blue clay. This hole was started with a rotary, but was not satisfactory. At present the well is in first-class condition.

Canadian Coalinga and Vancouver Coalinga

The Canadian Coalinga Oil Company, Section 8, 21-15.—Well No. 1 is 1475 feet deep with 12½-inch casing, free in the hole; formation blue shale; "Jim" Walp has charge of the drilling.

The Vancouver Coalinga Oil Company, Section 14, 20-15.—Well No. 1 is 820 feet deep; has passed through the quick sand and going nicely. This hole was bothered with loose running sand that froze the 15½-inch screw casing. Jack Cypher has charge of the drilling. The contract calls for 4000 feet with 6¼-inch pipe as the last string.

W. K. Gets Splendid Well

The W. K. Oil Company, Section 2, 20-15.—Well No. 7 was drilled in about 15 days ago, and made so much gas that it was shut in until a boiler plant could be completed at a point sufficiently distant to keep fire from it. Last week the well was opened up and while being cleaned out commenced to flow oil, water and sand, at a rate roughly estimated to be at about 5000 barrels per day. The well has been completed at 3100 feet. The water that came with the first flow has been exhausted, the well has settled down to about 1000 barrels per day of 21.06 degrees gravity oil. Mr. Pauson, field manager, reports the well doing nicely, making very little sand.

Dominion Has a Fishing Job

The Dominion Oil Company, Section 7, 23-17, Kings County.—Well No. 1 has a fishing job, an under-reamer in the hole, 8¼-inch casing; at present the manager has the casing down to the

under-reamer; a new crew left town several days ago and work will be resumed at once. The unprecedented storms of last winter delayed all work in the south field; a cloudburst in the later part of March tore out the roads along the creek, making it impossible to haul in material. At present writing the work of development on this property is well in hand, and the formation is looking favorable for a well. The 2100 feet of 8¼-inch hole is in good condition except for this under-reamer.

Water Commissioner's Good Work

The Water Commissioner, R. Baker, is doing good work with the water wells. He is at present shutting off the bottom water in well No. 6 on the Seneca Oil Company's property, Section 12, 20-14. The first sand below the pay-sand is a water-sand, containing a salt silicate water; the next lower sand, about eight feet thick, is dry, with no trace of oil or water. At about 800 feet depth Mr. Baker will put in forty-five feet of cement and gravel, making a concrete job; a Baker sure-shot heaving plug will be put in the casing and driven in to this cement and gravel. This work is being done at the request of the Seneca Oil Company.

The Standard Oil Company, on Section 36, 19-15, have commenced a heavy standard rig for well No. 2, just south of the Sontag well. This territory is considered very deep, about 4000 feet, but is known to be productive of light oil, and a quality of oil that breaks well with refining. With the up-to-date equipment this is not as difficult to negotiate as 2000 foot territory was even six years ago, with the California Special casing, the Baker shoe, the new Ideal Rig Irons, the Double under-reamer, all California improvements, and a good driller, the operator can carry a string of casing to, well, to a great depth, to where the earth is very warm.

California Oilfields, Ltd., Building New Camp on Section 36, 19-15—Deep Wells

The California Oilfields, Limited, are building a new camp on the southeast quarter of Section 36, 19-15. Have acquired the W. J. Dickey interests of 400 acres. The big companies are unhesitatingly seeking the 4000 foot territory, as the results from the drilling in the east edge of the Coalinga field has developed the best refining oil, and so far, the limits to the east have not been defined. The eastern boundary of this property may be 4500 feet deep, but the oil will be light at that depth.

Castle Oil Cements at 3578 Feet—Showing of Light Oil

The Castle Oil Company, Section 4, 20-15.—Well No. 1 was cemented about 10 days ago at 3578 feet, 6¼-inch casing; for mation in place. The water has been bailed off and the cement is holding back the water. The sand under the shoe is showing indications of light oil, the manager, S. A. Guiberson, Jr., will test this sand thoroughly before going to the lower sand, that its value may be determined.

Wilcox Well in Red Shale

The Wilcox well on Section 12, 20-15, is 2780 feet deep, 10 inch casing, free in the hole. The formation for over 800 feet has been red shale, the same that is entered in the north end of the east side field, except that at the north end the strata is not so thick. Charles Wilcox and Fleschhacker are largely interested in this well.

Coalinga-Kettleman Doing Nicely

The Coalinga-Kettleman Oil Company, Section 2, 22-17.—Well No. 1 is 3245 feet deep, 8¼-inch casing. They have 45 feet of water-sand, are still in this sand. There is 2935 feet of 10-inch casing in the hole. The well is in excellent condition and drilling progressing nicely.

Berkeley-Coalinga to Increase Tankage

The Berkeley-Coalinga Oil Company, Section 2, 21-14, Well No. 2 has been spudded in, is now about 90 feet deep. Well No. 1 is producing a high gravity refining oil from a shallow depth. The tankage is now full and arrangements are being made looking to the increase of tankage to accommodate the production.

Minuro Spuds In

The Minuro Oil Company, Section 24, 19-15.—Well No. 1 on the northwest quarter, was spudded in last week; is over 200 feet deep, 12½-inch pipe. This property is east of the California Oilfields, Limited, deep territory, considering light oil producing sands, valuable for refining. The Captain Barneson interests control.

Union Down 2900 on Barneson Lease

The Union Oil Company, Section 4, 20-15, on the Guiberson lease, are 2900 feet deep with the rotary, are now setting in the heavy 10-inch casing. This territory, being near the Coalinga syncline, is believed to be about 4000 feet deep; light oil is looked for.

Esperanza Completes Water Well

The Esperanza Consolidated Oil Company, on Section 32, 23-19.—The water-well has been completed, this will add to the water supply needed for further development work in this locality of the Kettleman Hills.

California Counties to Operate

The California Counties Oil Company, Section 4, 24-19.—The rig, a full standard, has been completed for well No. 1, and is being rigged up; will spud in the coming week.

Turner Oil Company

The Turner Oil Company, Section 2, 20-15.—Well No. 3 is 700 feet deep, 12½-inch casing, cable tools are used in this hole. The formation thus far same as the other wells on this property.

BRIEFS FROM THE WEST SIDE

(Courtesy of the Midway Driller)

The Midway Driller, the reliable paper of Taft ,California, gives the following items of interest in its latest issue:

A heavy gas blowout on the Mays No. 1 well, on Section 28, 31-23, was experienced on the 16th inst., almost killing Wm. Edwards of the California Well Drilling Company. Gas was struck at 2980 feet.

The Traffic Oil Company has brought in its well No. 2 on Section 9, 32-23, in the Midway field as a 3,000 barrel gusher. The oil is 23 gravity.

The Midway Premier Oil Company on Section 19, 31-23 has struck the sand and expects to bring in a couple of good wells this week.

The Alberta Midway Oil Company has secured a lease from the Bear Creek Oil & Mining Company on Section 14, 31-23, and has commenced the erection of a rig.

The Midway Royal Oil Company has struck the oil sand at 2650 feet, on Section 19, 31-23, and every indication points to a big producer.

The Fairbanks-Morse Company is installing a big compressor plant on Section 19, 31-23, for the Carnegie Oilfields. Ltd., which will furnish water to all the oil companies in the northern end of the field.

It is reported that the Esperanza holdings in the Midway are being negotiated for by a representative of the Royal Dutch-Shell oil concern.

The Bear Creek Oil Company has given an option on the company's land in the North Midway district for twenty-five days at a price of $2,250 per acre, to persons representing English capital. The action was a result of the annual meeting of the stockholders, all of whom stand to realize $1.15 per share on their holdings if the sale is consumated.

Mammoth gusher still producing in excess of 4,000 barrels daily.

The January and July oil companies have been taken over by an English corporation under the operating title of the California Amalgamated Oil Company. The properties taken over embrace valuable holdings to the south of Taft. The new company is said to be a strong financial concern.

A gusher on the Universal Oil Company's property in Lost Hills, formerly known as the Martin & Dudley holdings, on Section 32, 26-21, is declared to have been secured at a depth of 823 feet, a production of 25 gravity oil, Beaume. Universal is said to be owned at the present time by the Crocker interests of San Francisco, and allied capital. We have no really authentic news excepting only that which we ourselves printed on Lost Hills several issues back. The well has just come in. Further information next issue.

Great Yield

During the last eleven months the Sunset-Maricopa field has produced close on to 11,500,000 barrels of oil; of this fully 8,000,000 barrels was produced by the world-famous, market-loading Lakeview Gusher.

Guaranty Oil Expanding Rapidly

By a deal recently consumated between the Guaranty Oil Company and the American Oilfields Company, of which E. L. Doheney is president, the latter company secured a quarter interest in the Guaranty Pipe Line Company, a subsidiary of the Guaranty Oil Company. The Guaranty Oil Company is rapidly forging to the front as a developing corporation. Their pipe line is an assured project. A survey of a part of the line has been completed. The initial pumping station will be on the United Crude property on the north east quarter of Section 2, Midway. From the United Crude property the first work will be laying the line to the railroad in order to enable the Guaranty Oil Company to ship their oil to their Los Angeles refinery, which has seven stills with a capacity of about 4,000 barrels a day. This refinery manufactures asphaltum, illuminating oil and lubricants, and other products. It was purchased from the United Oil Refineries, having formerly been the property of the Union Consolidated Oil Company. The pipe line's course from Maricopa will be over the mountains by as direct a route as possible to Santa Barbara and from there to Los Angeles. The Guaranty Oil Company has 280 acres in the Sunset-Midway Gusher belt at the present time, and will erect storage tanks with a 100,000-barrel capacity. In addition to all this, the Alcatraz refinery and asphalt plant at Carpinteria has been purchased at a price said to approximate $750,000, from the Crocker interests of San Francisco, owners of the property. The purchase includes twenty acres of ocean frontage, rights of way and large tankage, and the report given out by R. L. Cox, manager of the Guaranty Pipe Line Company, is to the effect that the company will immediately build wharves and loading facilities for barges and tank steamers. The various reports circulated all emanate from the source quoted above, Mr. R. L. Cox, and are considered authentic. If all the plans materialize there will be another great company to reckon with as producer, refiner, transporter and marketer of California oil in the very near future.

Well No. 1, Midway Premier Company's Gusher
President Snyder, of the Midway Premier, expects No. 2 to be fully as large. Nos. 3 and 4 are almost ready to be brought in.

Los Angeles Will Get Midway's Gas

The California Natural Gas Company, the recently incorporated subsidiary of the Standard Oil Company, which laid a pipe line to Bakersfield, Taft and Maricopa in order to supply those points with the product of the Standard's great gas wells in the Buena Vista hills, which are producing, altogether, nearly enough gas per day to light Greater New York, by actual measurment, is to pipe the gas to Los Angeles. This news comes from no less an authority than Vice-president J. A. Moffett of the Standard Oil Company, who contradicted the reports given out ever since the incorporation of the California Natural Gas Company, to the effect that the latter had no connection with Standard Oil. Mr. Moffett said plainly that the gas company is a Standard corporation. Mr. Monett stated that the gas would not be piped in the immediate future, as it would cost too greatly to lay the pipe until it was known whether or not the production could be relied upon to continue. He further denounced the law recently passed making it an offense to allow gas to escape from a well. As is well known, several of the Standard's gassers in the Buena Vista hills have been beyond all control. The Standard recently secured another great gasser, close to No. 5, and fully as large. The roar of this well could be heard plainly in the city of Taft, eight miles away.

Sunset Road Oil Bonds Prove Kern Valley Bank's Undoing

State Superintendent of Banks Williams ordered the closing of the doors of the Kern Valley Bank, located in Bakersfield, Cal., during the early part of the month as a result of the depreciation of the Sunset Road Oil Company's bonds, of which the bank was the holder to the extent of $460,000—not $1,000,000, as previously stated. The assets of the bank are given as $1,085,000—liabilities-deposits, $800,000.

The bonds of the Sunset Road Oil Company, held by the bank, are considerably below par at the present time, but Bank Examiner Dodds expressed the belief that the depositors would be paid in full.

Esperanza Consolidated Oil Company Notes

On Section 10, 31-24, Midway, the Esperanza drillers have landed the 12 1-2 inch casing at 1987 feet. This is said to be the longest string of 12 1-2 inch casing in the Midway field. They expect to carry the 10-inch down to 3,000 feet. The field and office force of the Esperanza, as far as Midway is concerned, underwent a change recently, B. T. Dyer succeeding E. B. Kimball as general manager, with headquarters in Bakersfield. Capt. John Barneson, president of the company, recently accompanied a number of capitalists on a trip to the various properties in the Midway and the Elk Hills.

Get Light Oil in Carissa

The Hueneme Oil Company, operating on Section 35, 31-21, Carissa plains, has brought in a well at a depth of 1,200 feet, which produces oil of 45 deg. gravity, Beaume. Size of the well not stated, but it is said that it is large enough to warrant further drilling at a decided advantage, and is considered to have proved a new territory valuable.

Buick Well Splendid Producer

The Buick Oil Company's well on Section 32, 31-23, about a mile east of Fellows, is still producing splendidly, its yield averaging 1,500 barrels per day. Considering that the oil comes through a two-inch pipe only, flowing through two five-sixteenths-inch perforations, the yield given is remarkable. The well was finished last February at a depth of 3300 feet. The oil is of 25 degrees gravity, Beaume. Well No. 2, which has been spudded in, is being drilled with a rotary.

Bear Creek Gets Producer in 27 Days

With exceptionally good management and luck the Bear Creek Oil Company's well No. 5, on Section 14, 31-22, Midway, was drilled and producing at the end of twenty-seven days from the time of spudding in. When finished the well did 400 barrels per day. There are four other wells producing at a like rate on this property.

Honolulu Gets Another High Gravity Well

During the latter part of April, the Honolulu Oil Company brought in another fine well, one mile from the great gasser, finished at a depth of 3,200 feet, producing oil of 26 gravity, Beaume. The well is located on Section 12, 32-24, the first well to be drilled in that section. It came in with an initial production of 3,500 barrels per day, which could have been greatly increased had the company so desired.

California Midway Again Spouting—Lakeview Also

During the latter part of the month the California Midway gusher, one of those which made so great a disturbance last spring in the Sunset field, "came back" strong, and produced steadily at the rate of 20,000 barrels for some days, according to reports received from persons at the well. The Lakeview gusher, for some reason unknown, suddenly quit producing the emulsion of mud, water and oil, which it had been turning up at the rate of about 10,000 barrels a day, and began to produce clear oil with but two per cent water content, at the same rate. The increased production of all these gushers helped to bring up the total production for the month very greatly.

May Extend Sunset Western Railroad to Coalinga

There has been considerable talk recently of an extension of the Sunset Western Railroad, which covers the West Side oil fields, through Lost Hills to Coalinga—a field to field railroad.

Consolidated Cements

The Consolidated Midway's great gusher on Section 30, 12-24, is again flowing at a good rate, the water having been successfully cemented off. This well was thought for a time to rank with the Lakeview gusher, the Union's big wells, and other monsters, but water broke into it and a bent piece of casing also troubled the owners so that is was only recently that the well could be again looked upon to produce.

Short News Notes From the West Side

Well No. 2, Continental Petroleum Company, Section 14, dropped thirty feet of casing and has a fishing job.

F. O. Martin, mineral inspector of the General Land Office at Washington, D. C., has been in Taft, Cal., to make a thorough investigation of the Boust placer mining claim, against which a protest has been filed stating that oil had not been found in paying quantities on the land involved.

The town of Taft is to have a National Bank. Two passenger trains daily are also promised to the West Side Fields.

The holdings of the Phillipine Oil and Gas Company on Section 15, 31-23, Midway, have been taken over by the Toronto Oil Company and are being actively developed. Canadian capital is said to be behind this company.

The Alberta Oil Company, Section 15, 31-22, Midway, is building two rigs and will start a string of tools in the near future. S. C. Tyron is in charge.

The Canadian Pacific Oil Company of British Columbia, Ltd., is down 2900 feet with a slight showing of oil in the shale.

Sage No. 11 has been capped.

Oleum Development Company's well No. 1 on Section 15, 32-23, is down about 900 feet and going very rapidly to oil, which is expected inside of 1,500 feet.

The Bakersfield Iron Works is building a large shop at Fellows, North Midway, in connection with the Associated Supply Company's depot on the Pioneer property.

The Union Oil Company's well on Section 24, Elk Hills, is down 2300 feet and has landed the 10-inch casing.

The Barnodon Oil Company's well on Section 14, in the Buena Vista hills is down 2,500 feet with 8-inch casing.

The California Natural Gas Company is laying a four-inch pipe line from Section 26 to Fellows and the field adjoining, through which they will pipe gas for fuel and lighting purposes to consumers.

The Monte Cristo Oil Company recently lost a suit against it, a verdict for the plaintiff, Leslie Ingalls for $10,833 being given. Suit was for $15,000 damages sustained by injuries received while in the employ of the company.

Midway Royal Petroleum Company, Section 11, 31-22, is down 2500 feet, close to "big sands."

The Madison Oil Company has spudded in No. 2. Has 4,500 barrels in storage.

The Midway Eighty Oil Company will develop the south half of the north west quarter of Section 14, 31-23, North Midway.

The town of Maricopa may incorporate.

The Templor McKittrick has spudded in well No. 3; has about 5,000 barrels in storage, all contracted for at 40 cents per barrel.

The American Oilfields has a new well on Section 33 which spouted in fine style when nearing completion. It is close to the big gushers near Fellows.

The Lady Washington has a fishing job in progress in well No. 1, which has been out of commission for about a month. The well is thought to be good for about 200 barrels per day.

The Bear Creek Oil Company has leased 80 acres in Section 14, 32-22, for a cash bonus of $20,000 and a one-fourth royalty on production.

W. D. MALTMAN

THE CALIFORNIA DERRICK'S EXCLUSIVE SANTA MARIA CORRESPONDENT

NOTE—Mr. Maltman is very well posted on all Santa Maria and especially Cat Canyon oil conditions, being an operator there.

PALMER OIL COMPANY

A peculiar change has come about in the gushing of Palmer wells Nos. 1 and 2. Heretofore these wells have spouted the oil like the beat of a pulse, but within the past week have changed to a constant outpour with a roar that can be heard for more than a mile. No. 1 has increased its production to approximately 2,000 barrels a day and No. 2 is gushing about 12,000 barrels a day. Nos. 3 and 4 are shut in and No. 5 is nearly completed, having entered the oil sand at a depth of 2,900 feet with 8-inch casing. There is a heavy gas pressure and every indication of a fifth gusher. No. 6 has attained a depth of 930 feet, with the hole in fine condition. No. 8 is drilling.

Palmer Storage and Shipments

Palmer has now approximately 600,000 barrels of oil in storage, and is preparing for a greater storage capacity, three new 55,000-barrel tanks being now under construction on the property. In regard to shipments: The Union pipe line, which will be again in commission this week, will take 2,000 to 3,000 barrels addition daily. Further plans for shipment of the company's oil will be given out in an early number as we have authentic information as to the progress of the pipe line which the company is known to be planning.

Additional Information About the Palmer Oil Company

The Palmer Oil Company enjoys the enviable reputation of having paid 23 dividends from the production of their No. 1 well, amounting to $485,467.90. Their contracts for oil to be delivered in the future are as follows: To the Union Oil Company, 1,384,994.70 barrels at a price of 55 cents a barrel, and to the Associated Oil Company, 1,070,-522.62 barrels at 50 cents a barrel. Palmer wells Nos. 1, 2, 3 and 4 have produced a total of 2,125,662.30 barrels of petroleum of an excellent grade up to this writing.

PALMER UNION OIL COMPANY

Palmer Union No. 1 should soon rank among the leading producers of the Cat Canyon field, as the gas pressure is stronger than in any other well in that field. No. 2 is down 1710 feet and the log checks with that of No. 1. No. 3 is down 1280 feet and drilling is progressing rapidly. No. 4 will soon be ready to spud in.

NEW PENNSYLVANIA PETROLEUM COMPANY

In the Santa Maria field the production of the New Pennsyvania has been remarkably steady, showing only 200 barrels variance in the past year. No. 6 of this company continues to produce 325 barrels a day of 25 degrees gravity oil, and the company has a contract for the sale of the entire production at 50 cents a barrel. Well No. 1, on the Cat Canyon lease, made an excellent start for the gusher class on the ninth of May, spouting oil to the top of the derrick and then sanding up. That this will become one of the leading producers of Cat Canyon is the prediction of President Finley, who has worked faithfully to bring the desired result. The dividend of one-half cent per share per month has been continued nothwithstanding the heavy expenses of developing the property and an increased dividend may be looked for soon.

COBLENTZ OIL COMPANY

Operating to the north of the New Pennsylvania property is the Coblentz Oil Company, which now has very favorable indications for bringing in their No. 1 well, drilling and now down 3640 feet. It is the opinion of the management that oil will be found between 3,800 and 4,000 feet. The well is in excellent condition and the casing now being used is perfectly free.

CAT CANYON OIL COMPANY

Just a half mile north of Palmer's Stendel Tract the Cat Canyon Oil Company have their No. 1 well drilling; formation blue shale. All surface sands having been successfully shut off, no further difficulties are anticipated. The recent developments in Princess No. 2 practically assure the success of the Cat Canyon Oil Company's well.

Just before going to press we learned that the Cat Canyon well made 100 feet in three days, drilling in blue shale. The company has recently made arrangements with the Brooks Oil Company for fuel oil at 85 cents a barrel delivered at Sisquoc station.

Princess Oil Company

Well No. 2 has reached a depth of 1400 feet at last reports.

Enos Oil Company

Numerous applications have been made to the Enos Oil Company for a sub-lease on their Santa Maria property adjoining the Cat Canyon Oil Company's holdings and it is said that operations here will start in the near future.

SUMMIT OIL COMPANY

Operating to the extreme north end of the Cat Canyon field is the Summit Oil Company, who have attained a depth of 2370 feet in their No. 1 well, carrying the 10-inch casing to this point. The formation is sticky blue shale, and from all indications this will be a successful well, proving several miles of intervening territory.

DISPATCH OIL COMPANY

The Dispatch Oil Company, on the forty-acre tract adjoining the Ideal Oil Company, struck the first oil sand at a depth of 2700 feet and the gas pressure is so strong that a big well is anticipated at an early date.

SANTA MARIA ENTERPRISE OIL COMPANY

Immediately adjoining the new Pennsylvania's Cat Canyon lease to the south is the Santa Maria Enterprise Oil Company, who have their No. 1 well down 1740 feet with 10-inch casing. The formation is blue shale and very similar to the successful wells adjoining it.

PRINCESS OIL COMPANY

The most interesting event of the week in Cat Canyon district is the showing of Princess No. 2, operating on the Tunnel tract in Tepusquet Canyon. At a depth of 1385 feet a strong flow of gas was struck and for more than five minutes, water, mud, and a slight showing of oil was thrown over the derrick. The formation shows every indication of oil, and the management expects a good well at an early date. Princess No. 1, operating on the Muscio tract near Foxen Canyon, is down 2104 feet and has gushed over the derrick several times. The bringing in of these two wells is of great importance to eastern Santa Maria, as it demonstrates such a vast area.

SANTA MARIA MIDWAY OIL COMPANY

About two miles from the Princess Tunnel tract, the Santa Maria Midway have their No. 1 well down 900 feet in brown shale. This company have made remarkable progress considering the many delays caused by weather conditions.

PINAL OIL COMPANY

The Pinal Oil Company are waiting for the cement to set in the Cat Canyon well, which is down 2120 feet. This well has 120 feet of very rich sand and promises to be a big producer. In the old field, No. 18 is being completed, drilling having been suspended temporarily. No. 29 is being finished and No. 30 will soon be ready to spud in.

BROOKS OIL COMPANY

On account of the success the Union Oil Company have had with their air compressor, the Brooks Company have decided to follow suit, and are preparing to put in a first class compressor on their No. 2 well.

UNION OIL COMPANY

Well No. 5, after producing 5,000 barrels a day with the aid of an air compressor, has sanded up, due to the compressor being withdrawn. It is reported that the compressor will be reinstated. This feature of development is very important to Santa Maria operators, as it demonstrates a new method for starting these wells to flow.

CARPENTERIA OIL COMPANY

Well No. 1 on the Carpentaria is down 2360 feet, the formation being identical with that of the Brooks Oil Company's No. 2.

United States Supreme Court Rules Against Standard Oil. "Light of Reason" however, Brightens Ruling

The Standard Oil Company must dissolve. That is the dictum of the highest tribunal in the land. Even now the dissolution is under process of enactment. For in its ruling of the fifteenth of May the Supreme Court of the United States unanimously held the Standard Oil Company of New Jersey, that mightiest of all oil corporations in existence, a combination in restraint of trade and subject to the Sherman anti-trust law, affirming the decision of the Circuit Court of the United States for the Eastern District of Missouri, saving only that six months instead of thirty days was given the defendant wherein to wind up its affairs.

Instead of giving all corporate business in the United States a blow which would send it staggering and reeling to destruction, the Supreme Court decided or interpreted the Sherman anti-trust law in such a manner as to permit of corporate existence when no intent to monopolize can be proven, but, holding that the acts of the defendant had proven this intent, the Standard Oil Company was ordered dissolved.

A great number of both publications and individuals have declared that the United States highest court of appeal has nullified the Sherman anti-trust law by insisting on the "rule of reason." Be that as it may, such is now the law, for the Supreme Court has so ruled. Said Chief Justice White:

"As acts which may come under the classes stated in the first action and the restraint of trade to which that section applies are not specifically enumerated or defined, it is obvious that judgment must in every case be called into play in order to determine whether a particular case is embraced within the statutory classes and whether, if the act is within such classes, its nature or effect causes it to be a restraint of trade within the intendment of the act.

"To hold to the contrary would require the conclusion either that every contract, act or combination of any kind or nature, whether it operated in restraint of trade or not, was within the statute, and thus the statute would be destructive of all the right as to contract or agree to combine in any respect whatever as to subjects embraced in interstate trade or commerce; or, if this conclusion were not reached, then the contention would require it to be held that as the statute did not define the things to which it related and excluded resort to the only means by which the acts of which it relates could be ascertained, the light of reason.

"The mere generic enumeration which the State makes of the acts to which it refers and the absence of any definition of restraint of trade as used in the statute leaves room only to limit the application of the act by precise definition; but while clearly fixing a standard—that is, by defining the ulterior boundaries which could not be transgressed with impunity—to leave it to be determined by the light of reason, guided by the principles of law and the duty to apply and enforce the public policy embodied in the statute in every given case whether any particular act or contract was within the contemplation of the statute."

The Chief Justice stated that the Court found no cause to doubt the conclusion of the Court below, namely: "That the acts and dealings established by the proof operated to destroy the 'potentiality of competition' which otherwise would have existed to such an extent as to cause the transfers of stock which were made to the New Jersey corporation and the control which resulted over the many subsidiary corporations to be a combination or conspiracy in restraint of trade in violation of the first section of the act, but also to be an attempt to monopolize and a monopolization bringing about a perennial violation of the second section."

He based the conclusions of the Court that the holdings below were right on two broad reasons. These were stated by the Chief Justice to be as follows:

"A—Because unification and power of control over petroleum and its products, which was the inevitable result of the combining in the New Jersey corporation by the increase of its stock and the transfer to it of the stock of the many other corporations aggregating so vast a capital, give rise, in and of itself in the absence of countervailing circumstances to say the least, to the prima facie presumption of intent and purpose to maintain the dominancy over the oil industry, not as a result of normal methods of industrial development, but by means of combination which were resorted to in order that greater power might be added than otherwise would have arisen had normal methods been followed the while with purpose of excluding others from the trade and thus centralizing in the combination a perpetual control of the movements of petroleum and its products in the channels of interstate commerce.

"B—Because the prima facie presumption of intent to restrain trade to monopolize, and to bring about monopolization resulting from the act of expanding the stock of the New Jersey corporation and vesting it with such control of the oil industry is made conclusive by considering, first, the conduct of the persons of corporations who were mainly instrumental in bringing about the extension of power in the New Jersey corporation before the consumation of that result and prior to the formation of the trust agreements of 1879 and 1882; second, by considering the proof as to what was done under these agreements and the acts which immediately preceded the vesting of powers in the New Jersey corporation, as well as by weighing the modes in which the power vested in that corporation has been exerted and the results which have arisen from it."

In subjecting to scrutiny the acts and doings of the Standard Oil Company in the long distant past for the purpose of getting assistance in discovering intent and purpose, Chief Justice White remarked:

"We think no disinterested person can survey the period in question without being irresistibly driven to the conclusion that the very genius for commercial development and organization which it would seem was manifested from the beginning soon begot an intent and purpose to exclude others, which was frequently manifested by acts and dealings wholly inconsistent with the theory that they were made with the single conception of advancing the development of business power by usual methods, but which on the contrary necessarily involved the intent to drive others from the field and to exclude them from their rights to trade and thus accomplish the mastery which was the end in view.

"And, considering the period from the date of the trust agreements of 1879 and 1882, up to the time of the expansion of the New Jersey corporation, the gradual extension of the power over the commerce in oil which ensued, the decision of the Supreme Court of Ohio, the tardiness and reluctance in conforming to the commands of that decision, the method first adopted and that which finally culminated in the plan of the New Jersey corporation, all additionally served to make manifest the continued existence of the intent which we have previously indicated and which among other things impelled the expansion of the New Jersey corporation.

"The exercise of the power which resulted from that organization fortifies the foregoing conclusions, since the development which came, the acquisition here and there which ensued of every efficient means by which competition could have been asserted, the slow but resistless methods which followed, by which means of transportation were absorbed and brought under control; the system of marketing which was adopted, by which the country was divided into districts and the trade in each district in oil was turned over to a designated corporation within the combination and all others were excluded, all lead the mind to a conviction of a purpose and intent which, we think, is so certain as practically to cause the subject not to be within the domain of reasonable contention.

"The inference that no attempt to monopolize could have been intended, and that no monopolization resulted from the acts complained of since it is established that a small percentage of the crude oil produced was controlled by the combination, is unwarranted. As substantial power over the crude product was the inevitable result of the absolute control which existed over the refined product, the monopolization of the one carried with it the power to control the other, and if the inference which this situation suggests were developed, which we deem it unnecessary to do, they might well serve to add additional cogency to the presumption of intent to monopolize, which we have found arises from the unquestioned proof on other subjects."

Justice Harlan gave the only dissenting opinion, his objection being, in brief, the limitation of the application of the Sherman anti-trust law by the "light of reason," he holding that such limitation was writing and not expounding the laws, and it being a fixed policy of the Government of the United States that legislation belongs only to and shall originate only in the Lower House of Congress, he held that the interpreting of the Sherman law by writing in the "light of reason" was an assumption of the legislative power by the judicial department of the Government.

Suit for the dissolution of the Standard Oil Company was first brought in the United States District Court, Eastern District of Missouri, for violation of the Sherman anti-trust law. The Standard Oil Company of New Jersey, some seventy subsidiary companies, John D. Rockefeller, John D. Archbold, Henry M. Flagler, and numerous others high in the counsels of the Standard Oil Company were named as defendants. They were found guilty and given one month in which to dissolve. The Standard Oil Company appealed, and, a little over one year ago, in March, 1910, the case came before the United States Supreme Court, the decision being announced on May 15th. When the Standard has completely complied with the command of the Court there will be a new manner of proceeding, in all probability, along corporation business, so as to conform with the new ruling. When that time has come around we will give such information as is obtainable.

Henderson Union Oil Company

The Henderson Union Oil Company, operating in Wheeler Canyon, about ten miles northwest from Santa Paula, and a half mile from where the famous Wild Bill gusher came in, has six small wells which have been producing some 17 years, and one new well, below the old wells on the dip of the anticline, which is now somewhat beyond 1,700 feet, and which has been in oil since reaching a depth of 768 feet, with a strong gas pressure. Three of the shallow wells were sunk about 1,000 feet only, and started off from 100 to 125 barrels per day. The logs of these wells were kept, as were the logs of the other shallower wells. The same formations have been encountered in the new well and it seems to prove that the first wells merely scratched the surface. The company has a second deep well started, now down about 800 feet, and will carry it through to the depth desired, probably 1,700 feet. There is a considerable gas pressure, as usual in this field, but the wells will probably be put through to the 1,700 foot depth.

E. E. Henderson, who brought in the Palmer gusher, and who is the largest individual stockholder in the Palmer Oil Company, is the president of the Henderson Union Oil Company, which is a close corporation. There is every reason to believe that the company will get big wells under his management, with the showings already made.

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LATEST SAN FRANCISCO STOCK EXCHANGE QUOTATIONS

Following are the prices bid and asked for stocks listed on the San Francisco Stock Exchange meeting with inquiry. Lack of mention does not mean that other listed companies have not met with inquiry, but that the inquiry has not been recent.

	bid	asked
Alma		.95
Amalgamated Oil	55.50	60.00
American Petroleum(pfd.)		
American Petroleum (com.)	39.50	43.00
Amy		.75
Associated Oil stock	52.00	52.25
Associated Oil bons 5s		
Bay City		
Blue Moon		.05
Brookshire	1.22½	1.25
California Midway		.53
California Oil & Gas		
Claremont	1.15	1.25
Coalinga Central		
Coalinga Mohawk		.95
Coalinga National	.20	.21
Consolidated Midway	.13	.15
Cresceus	.40	.46
Dabney		.10
Del Rey		.17
De Luxe	1.00	1.25
Dominion		1.00
Empire	1.60	1.75
Euclid		
Enos		.76
Esperanza		
Four		
Fulton		.25
Globe		
Graciosa		
Gypsy		
Home		
Homestake		.30
Illinois Crude	.25	
Imperial		
Jade		
Junction		
Kern River		
Linda Vista		
Lucile		2.1
Maricopa National	.25	.26
Maricopa 36		2.00
Mascot		1.85
McKittrick	.12	.13
Monte Cristo	2.05	
Nevada Midway	.16	
New Pennsylvania Petroleum	.50	.55
Occidental	.15	
Pacific States Petroleum	.26	
Palmer	1.37½	1.40
Palmer Union	.45	.49
Peerless	3.90	4.00
Piedmont		.15
Final	5.00	

	Bid	Asked
Premier	.55	.60
Producers'	2.50	3.50
Record	5.50	
Republic	.49	.50
Rice Ranch		1.80
Sacramento	.12	.14
S. F. & McKittrick	13.00	14.00
Sovereign		.18
Silver Tip		1.10
Sauer Dough		1.60
S. W. & B.	.20	.26
Sterling	1.75	2.00
Sunset Monarch	.55	1.00
Superior	.21	
Turner	1.10	1.25
Wolverine	.40	
W. K. Oil Co.	2.65	
Yellowstone		.25
Storage Certificates	.33	

LOS ANGELES QUOTATIONS

PRODUCERS	bid	asked
Amalgamated Oil	53.00	55.00
American Crude Oil Co.		.63
American Petroleum Co. (pfd.)		
American Petroleum Co. (com.)		42.00
Associated Oil	52.12½	52.50
Bear Creek Oil & Mining Co.	.75	.90
California Midway Oil Co.	.52	
Central	1.97½	
Columbia	1.09	1.20
Consolidated Midway Oil Co.	.14⅝	.14¾
Continental Oil		.35
Enos Oil Co.	.55	
Euclid Oil Co.		.55
Fullerton Oil		5.00
Globe		.12
Jade Oil Co.	.36¾	.37
Mexican Petroleum		
Mexican Petroleum Ltd. (pfd.)	65.50	
Mexican Petroleum Ltd. (pfd.)	31.50	32.50
Mascot Oil Co.		2.00
New Pennsylvania Petroleum Co.	.40	
Olinda Land Co. (Oil)	.48¾	.51
Palmer Oil Co.	1.35	1.40
Pennsylvania Midway Oil Co.		.25
Piru Oil & Land Co.		.17
Rice Ranch Oil Co.	.36	.40¾
Section Six Oil Co.	.03½	.08
Traders' Oil Co.	60.00	69.00
Union Oil Co.	102.87½	103.87½
Union Provident Co.	102.37½	102.87½
United Petroleum	102.62½	103.00
United Oil Co.	.98	1.00
Wets Coast Oil (pfd.)		
Western Union	80.50	90.00

NON PRODUCERS	bid	asked
Nevada-Midway Oil Co.	.16	
Oleum Development Co.	.07⅞	.07¾

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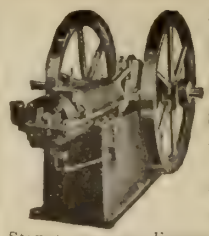

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Illustrations for A. S. Cooper's Article "Uplifts and Subsidences" (See Opposite Page)

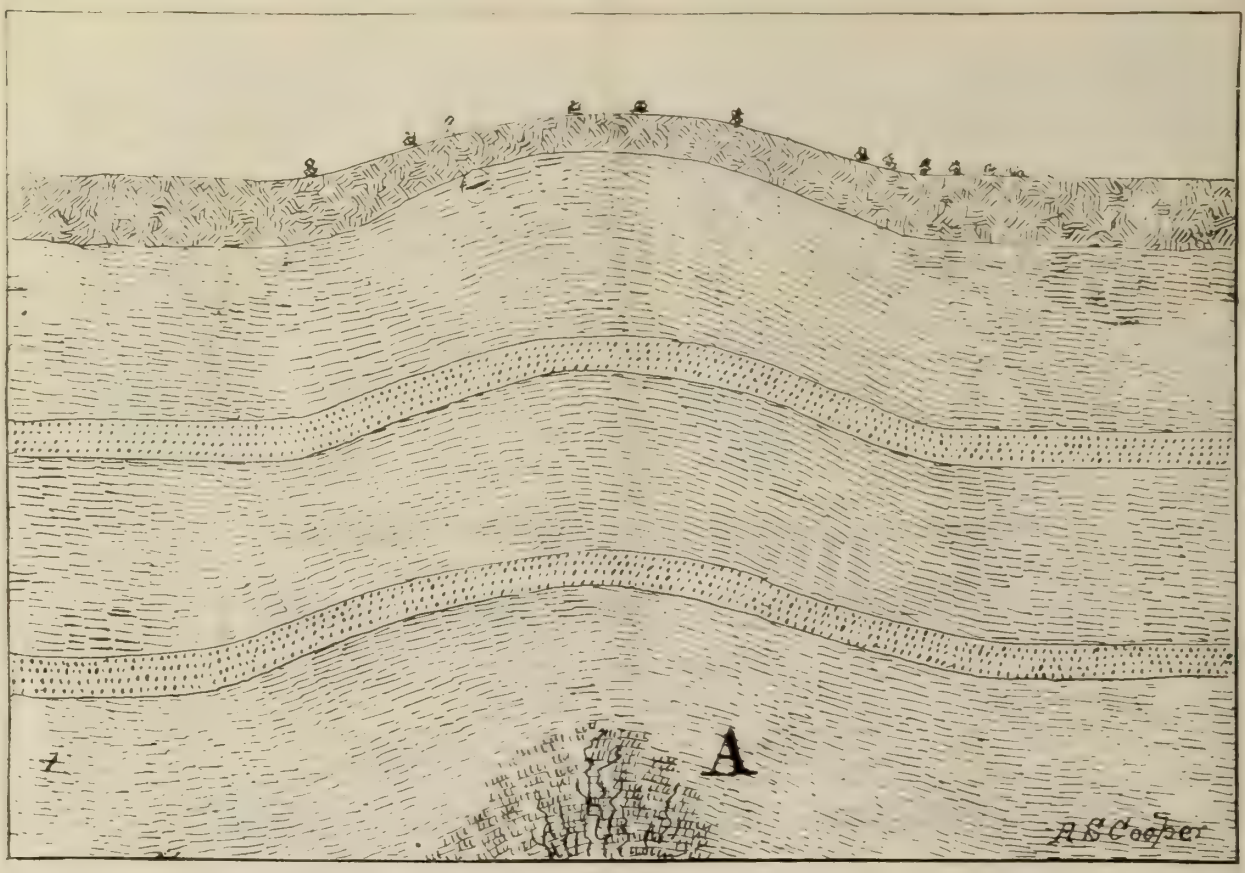


Figure 1.

Figure 2.

Drawings by Author

CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 34 SAN FRANCISCO, CAL., JUNE 25, 1911. No. 12

Uplifts and Subsidences

By A. S. COOPER, E. M., Ex-State Mineralogist of California

Uplifts or Mounds

Up to the present time the connection between subsidences and the accumulations of petroleum oil and natural gas has not been recognized. Nevertheless, subsidences merit more than passing notice. Indeed they deserve close attention and study. This article discusses uplifts and subsidences and the relation between them and petroleum oil and natural gas. The diagrams illustrate freely everything touched upon and the figures are sufficiently plain to explain the points which are here brought up.

Figure 1 is a sectional view through a dome or quaqua-versal composed of unaltered sedimentaries which have been uplifted.

When the domes occupy a small aera the upthrust has so compacted the strata that all avenues were closed to the ascent of petroleum oil or minerals in solution with water; but when they cover a large area it is possible that cracks and fissures are crudely vertical as shown in Fig. 1. Petroleum oil and natural gas by their inferior gravity as compared with associated water, could ascend into these cracks.

A word as to the formation of domes. They are probably brought about by the forcible injection upwards of molten rocks into fissures along lines of the structural weakness of the earth. This opens an avenue for speculation on the origin of the pressure required to force molten rocks upwards in such a manner. A plausible theory is that the contraction of the earth's crust by cooling, or the generation of vapors under enormous pressure in the heated zone of the earth, would exert the necessary force. Near to, and between Austin and Uvalde, Texas, the numerous small intrusions of igneous rocks into sedimentaries, forming mounds, support this theory. Rocks in the vicinity of these intrusions are impregnated with oil and asphaltum which further strengthens this theory. In California, when these domes are eroded to a sufficient depth, a core of metamorphic rocks is exposed. These metamorphic rocks are generally underlain by igneous rocks.

In support of the theory given for the reason of the existence of these domes it might not be out of the way to mention that within the last century a dome or mound was found near New Madrid, Missouri, and that islands are known to have risen from the sea, cast up over night, have remained in existence for a number of years and then as suddenly as they arose, have disappeared. Structural weakness of the earth at such points is the only explanation of their coming to the surface.

Uplifts and Subsidences

In California, along a line of structural weakness of the earth within a distance of fifty miles, fourteen domes are found rising out of a nearly level plain. While these domes vary in height from seventy to four hundred feet and while each will cover six hundred to four thousand acres, a nearly straight line will cut the summits of all of them. Many subsidences exist on or near them. Up to the present time they have not been developed for oil or gas. In places gypsum and oil impregnate these mounds and gas issues through the ponds and lakes occupying these subsidences. The Lost Hills, an elongated dome in Kern County, California, where oil has recently been obtained at a shallow depth, rise out of the level plain of the San Joaquin Valley. If oil is shown to be in one dome it is possible that it may be found in another, if the country is petroliferous.

Subsidences

If the reader will turn for a moment to Figure 2, he will be able to obtain a sectional view showing the broken, faulted and general jumbled up condition of the original stratum and the secondary minerals contained in a subsidence. The letters AA indicate alluvial deposits, CCCC, sandstone; BBBB, clays, shales or marls. The cavities, fissures, interspaces and the secondary minerals hereinafter mentioned are indicated by the all-blackened sections of the figure, other than representing diffeernt strata. The subsidences themselves are shown on the surface by depressions, which are usually occupied by the waters of a pond or lake. Figure 3 shows Laguna Blanca near Santa Barbara which occupies a subsidence, this bearing out the idea just advanced. Laguna Blanca, it might be added, is in a group of hills formed by an uplift.

Cause of Subsidences and California Conditions

There are two causes which produce subsidences; namely, the removal of mineral matter and the contraction of rocks and material underlying the place where subsidence later occurs. In California the subsidences are due to the contraction of sedimentary rocks by burning, through metamorphic heat, forming burnt shales, jaspers and other rocks; by the cooling and contraction of igneous rocks, and by the leaching of limestones, calcareous shells, salt, gypsum and other soluble substances from the underlying formation, and their transference to the surface or to the lenticular cavities, fissures and interspaces in the upper portion of the subsidence. The face of a bluff of shale and sandstone in which subsidence has taken place, is different from the face of those rocks which have been thrust upwards, or which have been subjected to lateral pressure.

Differences Between Fractures of Rocks in Uplifts and Subsidences

In the manner and direction of fracture the rocks of an uplift differ from those of a subsidence. Cracks and fissures in an uplift will approach vertically, whereas, subsidences will

cause horizontal cracks, fissures and interspaces through the parting of rocks by gravity.

Small subsidences usually form a contraclme and the de

pression is always greater in the center than at the periphery. Even the early settlers of California, in the days of the old Spanish dominion, were familiar with the depressions which they termed "hollas" (bowls) because of their bowl-shapeness.

In a subsidence or quaqua versal which covers but a small area, the tendency of the strata is towards falling away from its sides, producing fissures through which gas and oil may ascend, which is one of the reasons why escaping gas, oil or rock asphalt is generally found on the margin of a subsidence.

Figure 4 shows a partial subsidence which has not reached the surface. A study of this cut leads to consideration of a fact to which no little interest attaches. That fact is, the area subsides many times. The entire area does not subside at the same time nor to the same extent; therefore, the rocks are greatly broken and crushed; nor does the movement take place quickly, but probably continues for many years; which slowness allows time for the deposition of many minerals from solution.

Formation of Lenticular Cavities

In the subsidence of shales and sandstones numerous lenticular cavities lying nearly horizontal are formed, which are arched above the rocks, having sunk from beneath these arches. When these arches break, the cavities are filled with loose material and are often found filled with secondary limestone, gypsum, salt and iron pyrites, which have been carried into them in solution with water. These cavities do not occur in formations which have been uplifted. If there are spaces in an uplift they will be caused by the bending or the stretching of the rocks, or by faulting. These cracks and fissures will approximate vertically.

On the margins of the subsidences terraces often occur. These terraces are occasioned by the sinking of the formation beneath a block of land of hundreds of tons weight, shown at D, Figure 2 (see frontispiece). They are not land slips caused by the earth's being heavy through rains and moving on a slipping plane.

Gases are nearly always found in these subsidences exhaling from the surface of the earth or from springs or wells. Many times seepages of oil occur. Probably many hundreds of subsidences occur below the surface of the Great Valley of California that have been filled up by the debris from the

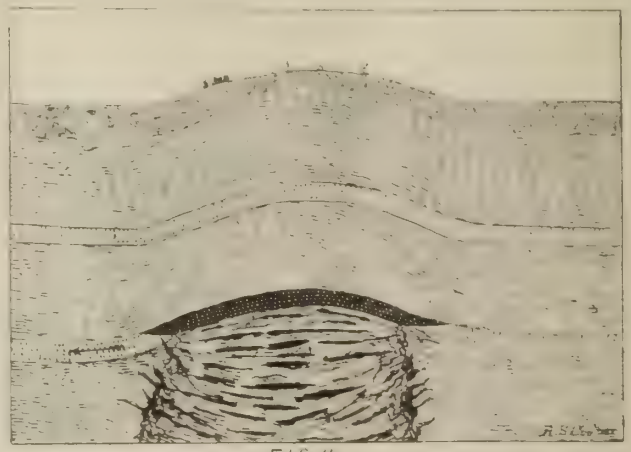


FIG 4

streams that enter the valley, so that at the present time they are not visible on the surface.

(To be Continued)

U. S. Geological Survey Bulletin.

"The Production of Fullers Earth in 1910," by Jefferson Middleton, an advance chapter from "Mineral Resources of the United States, Calendar Year, 1910," is a most interesting little pamphlet with valuable information detailing the occurrence, mining and preparation, uses, history, production and imports of this valuable product, which is now mostly used for clarifying oils. This product, originally used for "filling" cloth, was imported into the United States entirely until as late as 1893, from England; in 1893 its discovery in commercial quantities in Florida soon created a demand which has grown steadily as the product has come more and more into use as a detergent for mineral oils. For further information write U. S. Geo. Survey, Washington, D. C.

San Francisco Attracts

San Francisco is becoming more and more the headquarters for oil corporations great and small. The reason is not difficult of solution; San Francisco is growing greater all the time; San Francisco affords unequalled harbor facilities; San Francisco is the New York of the Pacific; San Francisco affords every convenience which a central position, combined with deep sea transportation and metropolitan advantages could afford. European and Eastern capital find San Francisco the proper channel through which to pass their money and companies with headquarters in San Francisco, dealing with San Francisco bank-institutions, have a considerable advantage in their dealings with foreigners. The shipping facilities for petroleum is whatsoever form as well as for every other commodity, are naturally very attractive. In addition to this, at this time San Francisco exerts especial attraction to cause capital to locate here, because it is "The Exposition City."

Oil Field Courtesy

There is more courtesy and kindliness in the California Oil Fields than probably will ever be unearthed in the great cities of the world. This we say in spite of the protests which may arise, because it is our conviction. The oil fields of California have more genuine gentlemen to the square inch than any other place where it has ever been our lot to travel. Consider Col. Tim. Spellacy. Recently his company was sued for a large sum of money, by an employe who had been injured on the Premier property, as was later proved, through his own lack of care. The employe lost the suit, whereupon Col. Spellacy made him a check for a thousand dollars and directed that as long as he wished to work on the Premier, he should be employed. Here is an instance of the finest kind of courtesy and kindliness combined with impartiality and something more than justice. To even hear of matters of this nature makes a man proud to be acquainted with California oil men.

California Production for and Field Operations During May, 1911

Field.	County.						
Kern River	Kern	11	16	1,611	15	1	1,220,470
McKittrick	Kern	5	16	163	2	1	416,378
Midway	Kern	35	226	424	28	8	1,765,888
Sunset	Kern	9	72	205	11	1	447,733
Coalinga	Fresno	23	114	699	11	1	1,510,887
Watsonville	Santa Clara		1	5			3,720
Arroyo Grande	San Luis Obispo		2	4			2,200
Lompoc	Santa Barbara		5	19			67,800
Santa Maria	Santa Barbara	4	39	156			685,141
Summerland	Santa Barbara	1	1	130			6,100
Santa Paula	Ventura	8	33	261	3	1	40,945
Newhall	Los Angeles		5	76			13,020
Salt Lake	Los Angeels		13	261	1		235,387
Los Angeles	Los Angeles			415			36,936
Whittier-Coyote	Los Angeles	1	23	137			83,823
Puente	Los Angeles			56			2,700
Fullerton-Brea Canon	Orange	6	49	248	4		574,338
Salinas Valley	San Benito and Monterey		2				
Repetto	Los Angeles		1				
	Totals	103	618	4,870	75	13	7,113,466

Summary

	Barrels.
Stocks, April 30, 1911	36,525,096
Production, May, 1911	7,113,466
	43,638,562
Consumption, May, 1911	6,434,136
Stocks, May 31, 1911	37,204,426
Average daily production	229,467
Average daily consumption	207,553
Average daily surplus	21,914

General Notes From Various Sources

Crude oil importations from Mexico promise to become a large factor in the sale of Mexican oil, and also a factor in the market for Texas and Louisiana fuel oils.

E. L. Doheney, President of the Huasteca Petroleum, Mexican Petroleum, and other companies, is said to have negotiated for the sale of the entire production of the Mexican companies of which he is president to a great Atlantic steamship line, with the assurance of success. It is further stated that the steamship company referred to wished to contract for no less than 60,000 barrels per day.

Agricultural entries of public lands, made in good faith, whereon minerals are thereafter discovered, and mineral claims filed upon, are valid and hold, according to a recent decision of the Land Office. If they were not, the poor agricultural entry-man would certainly have an extraordinarily hard time in California, inasmuch as almost half of the agricultural lands of the State could be settled upon as mineral bearing.

Two young men recently descended Well No. 3 on the Turner Oil Company's property at Coalinga, to a depth of 185 feet, for the purpose of connecting the drilling line with a string of tools accidently dropped in the hole, which is an 18-inch bore. Electric flash lights enabled them to accomplish their task quickly and satisfactorily.

The two latest United States battleships to be planned will burn oil for fuel, exclusively, according to a recent report, and will be designed to make an average speed of 20½ knots per hour. Col. Tim. Spellacy says oil is THE coming steamer fuel, both on the Atlantic and Pacific.

A wagon road from Midway to Santa Barbara, via the route of the Guaranty Pipe Line right of way, is the latest proposition of interest in road oil circles. It is possible, however, that the Guaranty line may run direct to Ventura and not to Santa Barbara, in which case the proposed road would in all probability follow it. The proposition, it is stated, would be aided, in all probability, by the U. S. Government. The road would not only serve as a beautiful scenic highway, but would greatly aid in opening up an almost inaccessable (to ordinary traffic) region of great value.

The State of Pennsylvania has just asked for bids for TEN MILLION BARRELS OF CRUDE OIL FOR ROAD MAKING. The State of California has VOTED EIGHTEEN MILLION DOLLARS FOR A SCENIC HIGHWAY. It looks as though there should be no trouble in disposing of road oil at a reasonable figure, doesn't it? By the way, D. Basil W. Alexander's article o n"Good Roads in the Making," begins in this number of this magazine. Look for it.

One dollar per barrel at the well is not too great a price to ask for California oil; but it will be a long, long time before "dollar oil" prevails. With the supply on hand it is likely to go lower before it goes higher; but in the end it will bring better prices than it does today.

Extra! Extra! The English, and Eastern capital, have bought out the State of California's oil producing region. Meanwhile those in the business will continue to make hay while the sun shines.

The Consolidated Oil Fields of Cailfornia, Ltd., a British corporation, with offices in the First National Bank Building, San Francisco, and with property in Petaluma and elsewhere, recently held a meeting in London for the purpose of "considering certain criticisms which had been directed against the company in the press." The meeting, it is said, resulted in a complete restoration of harmony, and confidence in the present administration of the company. It is said that a former prisoner, who "had it in" for the company, went to England and stirred up the trouble. As to this we have no knowledge, but we have met Mr. J. W. Frank, who promoted the company, and he seems to be doing all in his power to make it a success. The company has one gas and one oil well.

A matter of great interest to all locators of public lands on and after September 27, 1909, is the report that the United States Government is preparing to evict from ownership, use, etc., all claimants to Western Kern County oil lands who had not begun development on such property before that time. How soon such actions will be begun, if at all, has not been made public.

The Pinal oil property, in the Santa Maria field, optioned to G. G. Gillette and associates, for New York and Boston men, is declared sold. The price is said to be $2,000,000. The down payment is said to be $50,000. The Pinal is one of the best producers in the Coast fields, and has a production of about 42,500 barrels per month of high grade oil. The purchasers are said to be the same as those who recently purchased the Graham-Loftus property in the Fullerton field for $1,500,000.

Isogeotherm Hypothesis of Mineral Occurrence and Origin

Origin of Petroleum, Coal and Other Carbonaceous Products

By WM. PLOTTS, Whittier, California

Petroleum and coal occur in strata of various ages, the general series of which may be of the greatest variety of texture and hardness, and the general appearance of which may vary greatly in different fields, but in every region where they occur there is a something in common that is more or less discernable to the observer, but which is very difficult to describe. I am not referring to the oil stains or coal blossom that are generally easily distinguishable where erosion has cut into or through the oil or coal horizons, but to the series of strata in general, extending thousands of feet above and below those products.

Many observers, in trying to define this similarity, call it the age of the strata, it apparently being much younger and more crumbly than strata in thesame series many thousands of feet under it, but this is not the true solution, as different oil and coal bearing strata vary greatly in age, as determined by the fossils occurring in them; those of Pennsylvania, for instance, being probably several times as old as those of California. The true solution is: each horizon of like products has been subjected to a like approximate pressure from the mass of material above it, and to an exactly like maximum of heat at the time of its greatest subsidence; and that this heat was the point of distillation of these products (probably several hundred degrees), seems quite plain, and that the source of this heat was the presence of enough material above the carbonaceous horizons to create it through the orderly increase of heat downward in the earth's crust, must become apparent as soon as the facts in connection are generally known.

The classification of strata, according to the amount of pressure and heat they were subjected to, is of the greatest importance from a mineral standpoint, when we consider that most of the earth's present land surface has plainly had miles of material eroded from above it. This feature must not be lost sight of if we expect to form rational theories of the present condition of any part of this grand old earth's sub-surface.

The original superficial deposits above the petroleum must have been so vast, that where only half of them remain, the petroleum must be hopelessly beyond our reach. That this is so, is proven in many ways, the most simple of which is the very slow augmentation of, or increase of firmness in the strata as you trace them stratagraphically downward. It also seems plain that thousands of feet of the upper portion of the original deposits could have been little else than loose, incoherent masses, owing to the lack of sufficient pressure and heat to knit them into substantial strata, sufficiently firm to resist the wave erosion, as they emerged above the surface of the ocean.

In the following pages I intend to show that petroleum, in the continuance of its aggregate occurrence, forms a definite, limited horizon independently of the plane of stratification; and I hope that the reader will not lose sight of the grand and enormous scale on which the series of deposits were originally laid down, the slow rate of increase of heat in nearly all strata, and not to expect to observe a "made to order," or continuously regular horizon, because nature has been the constructor, and she does not work along geometrical lines; and I hope to convince you that it occurs in a former isogeotherm (plane of equal heat in the earth), and that coal, and many other more or less closely related products, occur in like manner, also limestones of like type, and that many, perhaps most of our mineral, and non-mineral earth products have a closer relationship to each other, than has been supposed. Most, if not all, of the metallic minerals seem to occur in horizons independently of the stratification, that represent former isogeotherms; but they do not necessarily occur in their zones of former fusion or volatilization; for instance, certain carbonate iron ores of a certain type occur numerously in, and seem to be confined to, the coal horizons. They may be said to be of purely chemical origin, but it seems that they required a certain degree of heat in order to enable their constituents to combine.

In pointing out the origin of petroleum and other carbonaceous products, I am not going to bring to my aid any theoretical conditions of an exceptional or miraculous nature, or conditions that might result from some catastrophe; but am merely point-out what must occur under normal conditions, such as we know of today.

To give a better understanding of the subject, I will now give in brief a summary of my conception of how petroleum and kindred products were concentrated in strata, and the probable source of the carbonaceous matter from which they were formed.

All authorities of any note now concede that most parts of the dry earth show evidences of former subsidence and emergence during inconceivably long ages of time, and many, and some certainly have, repeated the process over and over again, and that some of these subsidences, and subsequent elevations, have amounted to several miles vertically. Of course this may seem fantastic to many, but I am only appealing to those who have given the matter some tnought and inquiry. The best evidence that we can get is, that this buckling of the earth's strata is going o nnow as actively as ever, and has been going on for a time that is practically infinite.

We see different kinds of debris and sediment carried continually into oceans, building up the strata on the bottom. In this sediment is a proportion of vegetable matter, composed mainly of finely ground up leaves, etc. The remains of the lowest animal life might also in some cases, be sufficiently preserved to contribute, but the vegetable remains would seem to be ample.

Of course, the percentage of such remains in any strata might be small, but the aggregate in miles vertical of strata would be enormous, and from such deposits perhaps miles thick, we might expect to come the principal part of the carbonaceous matter that forms our petroleum, coal, or massive limestones, and allied minerals.

Now, we know that downward in the earth's crust, the heat increases. To the thoughtless this increase of heat might seem too slow to be applicable to our purposes, but we recollect that nature's operations are conducted on a grand and tremendous scale.

Of course, where a succession of regular strata is being built on an ocean floor, there is a gradual subsidence of the region, which might continue many million years, and after the subsiding strata became sufficiently hot, on account of the constantly added material above it, the heat would drive the distilled matter from the leaves, wood, etc., upward. Or rather, the resulting volatilized matter, instead of subsiding with the strata, would maintain its relative distance from the surface, or at least from the bottom of the ocean, as the constantly reinforced mass subsided, "skimmed" of its carbonaceous matter, which accumulated in quantity according to the amount of subsidence, and the richness in said matter.

To those who have had experience in confining gases under great pressures, there is no difficulty in conceiving the possibility of compounds of carbon penetrating and permeating any strata when at several hundred degrees temperature and tons pressure per square inch, and at the time of maximum subsidence of the region, which would only occur after ages, the varying carbon compounds would be left blended with the strata, confined to a definite, vertically limited, horizon, which would oc-

cur independently of the plane of stratification, and during the long ages of emergence and erosion, they would become further concentrated, and more or less firmly fixed by chemical affinity in the different forms in which they are now found.

How Petroleum Occurs in Strata

Petroleum occurs in any kind of porous strata that happened to be in its horizon of general occurrence. This horizon is always limited vertically, and in its continuance throughout large areas always occurs independently of the plane of stratification. Of course I do not mean that the horizon is evenly or continuously productive in petroleum; but that the successive or over lapping deposits all occur in this limited horizon; often with very extensive unproductive gaps between the productive portions. The common practice of speaking of successive horizons, one or more above others, is incorrect and misleading, as there cannot strictly be more than one oil horizon in the same locality.

We almost invariably find oil in such environments as show that it could not possibly have arrived there in its present liquid condition. Any oil prospector that has investigated much can testify to this. It is common to find pitted limestones of the hardest kind with the pits full of oil, on the surface, where it has weathered for ages, where the oil horizon has been eroded away.

It is common to find oil in sandstone, and pebble rock sometimes of adamantine hardness, although much of the oil in the newer formations, like that of California, Texas, and Mexico, occurs in sandstone so soft, that the expanding gas that occurs in connection with all oil, pulverizes the sand strata, so that sometimes large quantities issue with the oil from the wells, but most generally the strata is too firm to cave.

Those sandy strata were,of course, laid down under water, and the fact that they are barren of water generally, proves that before the oil took possession, they had of course, sub sided to a great depth, too great for water to occur as such, the heat or other chemical action having disassociated the component elements.

Water of varying degrees of impurity sometimes occurs in the oil strata under the oil, but it seems plain that where such is the case the presence of the water is the result of erosion, or faulting, long after the advent of the oil, and perhaps after the surface had been cut to within comparative nearness to the oil.

Where water has obtained access to deposits of oil the .atter has generally slowly percolated to the surface, or sub-surface, in sufficient quantity to betray the petrolific character of the locality and region. If the oil is of dense kind, containing much asphalt or other basic material, the residuum from such seepages sometimes occurs in large quantities.

Of course the oil and gas, and other fluid substances are under pressure in accordance with their depth; the discussion as to the cause of the pressure is without point. It would be a miracle if they were not under pressure until the pressure is removed by artificial means.

The actual pressure in a virgin oil "sand" or deposit is always in accordance with its depth below the surface, and is probably always below the pressure exerted by a column of water from the surface to the deposit, because as the region emerges and the surface is worn away, the deposit becomes cooler, causing the gases to condense and the pressure to decrease accordingly. Of course it often happens that the gas pressure in a well-hole will overcome the hole-full of water, or even thin mud, causing a "blow out," but this is owing to gas in considerable volume having free access to the hole, when the ascending gas, by lightening the column of water, would slowly overcome it.

If there are numerous oil showings on the surface where the strata is horizontal, or only moderately tilted, the valuable oil deposits, if any, are usually of only moderate depth and it is useless to drill to a great depth; and in similar strata if oil is found at a great depth there is never any showing on the surface.

Many times operators have drilled exploration wells a couple of thousand feet below the productive zone in search of another profitable deposit, but such attempts have always been failures. However, in localities of exceptional disturbance the oil horizon is likely to be more erratic and irregular than elsewhere.

We sometimes read geological reports of oil and gas, where the writers suggested that those products had moved freely through the strata and had arrived from afar along with the "circulating waters." Such writers' observation must be very superficial and their logic faulty, for those products are firmly incorporated with the strata of which they are practically a part; were it not so they would have been lost ages ago. The continuance of porosity of an oil stratum is usually quite limited or the grain is very fine.

It sometimes happens that a well is opened where the oil is under full pressure, in old territory where adjacent wells had been exhausted and abandoned for many years, and many other circumstances show us how thoroughly the oil is confined to the strata where it had to remain ever since it was forced there in a volatilized form.

There is a wide-spread notion that oil is a concomitant of certain strata and that if it is found at all it must occur in those strata, and that it is most likely to occur indefinitely in continuation of the plane of stratification from where it is known to occur.

This belief hasbeen a very costly error, for the aggregated deposits of oil in their continuance, despite the irregularity of their occurrence, form a definite horizon which is limited in vertical scope and which is rarely in exact conformity with the bedding over any considerable scope of country, and whenever an oil-containing stratum extends outside of the orderly zone of oil occurrence (unless the porosity should be continuous be yond any known example), it is bound to be barren of oil and thereafter remain so, unless it should re-enter the oil horizon, which would be improbable.

Where the oil occurs extensively and persistently in certain strata to which it has been narrowly confined over a consider able area, geologists have repeatedly and foolishly predicted that it would not occur in adjoining regions or localities because they were stratigraphically much higher and much younger; and when oil was found there in violation of their warning, the geologists would explain that the original lower stratum was the place of origin of the oil but that it had "migrated upward," and urged deeper drilling in order to tap the basic sands. It is perhaps needless to add that where such advice was acted on it was unproductive of any good results. Contentions of this kind never had any basis of fact.

If we could drill a well 30,000 feet deep do you suppose that we might find some oil at, say 1000 feet, and then go 5000 feet further and find another batch, and perhaps a few thousand feet below that find a bed or coal, etc.? Not at all. If oil was found at all the bulk of it would be found to occur in a vertical scope of a few hundred feet with possibly traces extending as much as 2000 feet above, and a less distance below, and below that no more would be found unless you could continue the hole to the Hellespont or China. If coal occurred it would be found above the oil, as it occurs everywhere that those two products are found in the same locality.

Critics who fail to see an orderly, definite horizon that occurs independently of the bedding in the apparently ir regular, hap-hazard grouping of the different oil "fields" when viewing the matter in this regard, seem to be expecting a "made to order" horizon where the fields would occur without wide gaps and in perfect plane; but nature does not work along geometrical lines or in any manner that could be described as regular, so I have described the horizons of mineral occurence as "orderly" in the sense of their occurence vertical-

ly, because I well know how very irregularly these products occur in their zones or horizons.

Each group of like products occurs in a common horizon, but any chemist knows what a great difference there is in composition of the different kinds of coal. Different kinds of oil being therefore of unlike kind might be expected to range in different positions in the grand horizon of petroleum occurrence, and it is common to find several beds of oil-containing strata overlaying each other, and occupying a vertical scope of possibly a thousand feet, altho it is more commonly confined to three or four hundred feet. In California, the several oil deposits may, including traces, extend vertically as much as three thousand feet, but such is rare. Much observation of the phenomena of petroleum occurrence has led me to think that cases of migration of petroleum out of its original zone of deposition are rare, except where erosion has permitted water to obtain access to oil, when the latter would slowly escape to the surface in the form of a seepage, which generally would require thousands of years to exhaust a deposit.

Petroleum found in different fields is never identical in composition. It ranges all the way from the tarry product of Trinidad, Mexico, and California, to the light product of the Appalachian region, Colombia, Java, etc., which is nearly as thin and clear as water. In some fields like Whittier, California, although the oils may conform to a certain type, there are hardly two wells that produce identical oil. Not only is the gravity varied, but the character of the oil otherwise different. In the latter field the oil horizon cuts diagonally across the trend of the steeply unturned strata; and there are perhaps one hundred different producing stratums; and as many of the wells obtain oil from several strata, and as each stratum contains digerent oil from its neighbor, the resultant blend is rarely exactly alike in any two wells. There is no such a thing as drawing a definite line between asphaltic oils and oils of paraffine base, as practically all oils contain both asphalt and paraffine, in traces, at least. Even in products resembling either coal or petroleum, it is difficult to draw the line between the two, for coal and kindred products blend into those resembling petroleum.

Petroleums of different character are often blended with shale of so fine a grain that the oil can hardly be detected except by smell. Such oils can only be obtained by distilling the shale, which is done profitably in some countries. The writer has seen such shales that looked to his unpracticed eye, exactly like some cannel coals, which will also yield oils by distillation. Limestones in the horizons of petroleum, often smell strongly of oil. In western Texas, and the larger part of eastern New Mexico, over an immense region, notably at Las Vegas, the harder shale, when freshly dug smells strongly of oil. "Stinking rock" is of this nature, as nearly all oil prospectors know.

If petroleum occurs in strata of one age more than another, it is probably one of those things which might be considered as accidental; and ability to determine and classify strata by their age according to the fossils they contain is not of the slightest value to the prospector. Indeed geology has never had the slightest knowledge of any value to the oil man, notwithstanding many promotion oil companies loudly proclaim that their properties are recommended by some "expert geologist" who gives a long dissertation of his "knowledge" to the suckers; and of his ignorance to the rest of us. There are many expert oil men who make a business of passing judgment on properties for others, and some of them prefer to be called geologists to which we can not object, but the odium that has been conected with the term of late would seem to be enough to dissuade any from attaching it to their names.

The character of the oil, also, does not seem to be affected by the age of the strata in which it is found; for, although the great bulk of the high grade oils have been found in very ancient formations, and nearly all the large production of heavy oils is produced from formations of recent age, the reverse is true of the very light oils of Java, India, and Colombia, S. A.; and of the rather inferior black oil of western Ohio and eastern Indiana.

The similarity in appearance of the strata that is so notice able in all regions where petroleum and other carbonaceous products are found, could only be caused by the degree of heat and pressure to which those strata in which these products are found were subjected at the time of their maximum subsidence. However, petroleum and coal bearing strata of great age, which were presumably subjected to pressure of the superincumbent strata for long ages, are firmer than are those of recent age, as might be expected. For instance, the shales of Pennsylvania, among which petroleum and coal are found, are much harder than the shales of California where the same products occur, but the same general appearance and coloring, and other indescribable conditions prevail in both regions, although one is vastly older than the other.

The definite, vertically limited oil-containing horizons of California, although not continuously productive, occur sometimes in considerable non-conformity with the plane of stratification, and sometimes obliquely cross the demarkations, where one series of deposits rest unconformably upon another. The same is true in the Appalachian and Middle West region, where the immediate surface for a thousand to two thousand feet, over the whole country, is an almost unbroken petroleum and coal horizon, although those products occur in separate deposits, or groups of deposits in that horizon, often widely separated from each other. That the successive deposits, do collectively, in their continuance, represent on a grand scale a definite limited horizon, which really occurs on lines of a former isogeotherm, must become apparent on sufficient consideration, although why the deposits do not occur more continuously in that horizon has never been satisfactorily accounted for.

(To be Continued).

Union Oil Developments.

We have very little concerning the Union Oil Company, their policy being a very reserved one. It is stated on good authority, however, that the proceeds of the $5,000,000 worth of bonds recently sold by the company will shortly be distrib uted among the several departments where it will do most good. The San Francisco Bay refinery, it is stated, is to be enlarged; a refinery at Stewart Station, in the La Habra Valley, is shortly to be constructed. Further—several new oil carrying vessels are to be constructed as well as storage tanks and distributing stations. Finally, as was the announced purpose of selling the bonds, a large amount of the sum will be devoted to drilling upon the untouched lands which the company has under lease and ownership. A conservative policy, which has always been maintained, will be pursued in the investment to be made.

Information from L. E. Aubury, State Mineralogists of California, is to the effect that the naval vessels of the Pacific will soon be converted to oil burners, and that fuel station sites will soon be selected, the action being the result of a determined fight by Aubury and others to induce the naval powers that be, that it was their duty to the government, and to the people to save the $1,250,000 which he declares would result by the change, and to increase the efficiency of the vessels.

Col. Timothy Spellacy is quoted as having said that he was preparing a measure making it obligatory on the part of oil companies to publish statements of oil runs and shipments in this State. At the present time the Standard Oil Company is the only company which publishes this information. The information is very much to be desired.

Present Condition of the Oil Industry in Mexico.

A Brief Description of the Tampico Oil Fields

By ALLEN G. NICHOLS

The Texas Mexico Company.

Up in the northern part of the country, the Texas-Mexico Company have taken over the old San Jose de la Russia Ranch of something over one million acres of land. They are already drilling, and in their first well, encountered oil at about three hundred feet some time in April last. They control a very large tract of land and are a strong company, under the management of Mr. H. S. McKeever. Extensive development work is projected for this point; also, further north in the Soto la Marina country an English syndicate control a very large holding.

The Mexican Fuel Oil Company.

The Mexican Fuel Oil Company, under the management of Leonard & Mount, and in which the Texas Company are very largely interested, have several large tracts of land, one of twenty thousand acres on the Panuco River. They also have three wells at Mate del Chapopote. They have two wells completed at Laguna de Tamos and are now drilling two more. Their No. 1 is good for about ninety barrels at something like two hundred and fifty feet deep. Well No. 2 has a capacity of about four hundred barrels and is a little less than six hundred feet deep. These wells are drilled very near the large seepages that have given this country its name and cause it to be considered one of the show places of the country as regards seepages.

Tampico Oil Limited.

The Tampico Oil Limited, an English syndicate, managed by Mr. Ernest Nickles, also have large holdings at this point, adjoining the Mexican Fuel Oil Company at Laguna de Tamos and extending to the Panuco River on the west. They are drilling two wells, in both of which they have encountered oil, one of which is being drilled by the old style pole tool rig. This company is using flush joint casing, as used in the Roumanian fields, and are meeting with good success with what seems, to a California man, an innovation, though in fact, it is an old idea in other fields. They have a tram road built from their camp to Chila, on the International Mexico Railroad, and have a pipe-line projected to the river.

International Petroleum Company.

The International Petroleum Company, headed by Mr. Vestres and John Hays Hammond, controls several very large tracts in various parts of the Republic, aggregating something like 1,500,000 acres. No active development work has yet been started by this firm but it is likely that they will commence work during the present summer at several points, one of the first locations selected being the Tenaja Ranch, near the town of the same name, some twenty miles from the Jaun Casiana country.

Huasteca Petroleum Company.

The Huasteca Petroleum Company, that have met with such splendid success at Juan Casiana, are now drilling near Tres Hermanos and are also moving material in at several different points in the Cerro Azul and the Juan Felipe country. Their new railroad, connecting the Juan Casiana country through Cerro Azul to Dos Bocas, is already under way and steel will probably be laid within the next few months.

The Aguila Company.

The Aguila Company are also doing extensive work in the Portrero country between there and Tampico and Tuxpan. Pipelines are being laid both ways and the company have lately brought in a very good well south of Ozuluama, not far from the shore of Lake Tamiahua.

Probable Extent of Field.

The extent of the field is extremely hard to designate at the present time. If the wells already drilled are taken as an evidence, it runs from the Soto la Marina country on the north to the Isthmus of Tehuantepec on the south, and from Ebano to the Coast, a district several times the size of the entire California field; but, if the seepages that are so numerous all over the country, are taken as an indication, the field extends from a short distance south of Brownsville, Texas, clear down into the United States of Columbia. I do not mean to say that the line of seepages is continuous for all of this distance but there are seepages of both oil and gas at various places all over this entire country. The district between Tamesi, on the north, and the Tuxpam River on the south is particularly rich in these seepages.

In the Ebano country, at Laguna de Tamos, on Old Town Lake, and in the Panuco and Topila Rivers, between Panuco and Caracol, there are an almost unlimited number of oil seepages, while gas shows at various points in the rivers mentioned. Further south, in the Cerro Azul, Juan Felipe and Soledad countries, the seepages are enormous and are an indication to oil men that at these points nature has stored up in underground storehouses an almost unlimited quantity of the finest steam raising agent known to man; that there is the equivalent in thermal heat units of untold billions of tons of coal.

Production of One Well

One well in this, which promises to be the greatest field in the world, has produced for several months, each day the equivalent in steam raising power of the efforts of twenty thousand coal miners working for the same period and while much of the valuable product of this well has been lost, owing to lack of storage facilities that were not provided because the necessity could not be foreseen, there has been saved an amount that is worth at the present time at least $3,000,000.00, and the well still has a capacity of many thousands of barrels per day and is now under complete control.

Market for Mexican Oil.

The market for Mexican oil is practically the eastern half of the United States, the Republic of Mexico, the Atlantic ocean and the coast points of Europe. California can never compete with Mexico for any of these markets. Railroad transportation would be at a prohibitive cost from California to New York, and even after the completion of the great Panama canal, it will cost in the neighborhood of 45 cents per barrel to take oil from the San Joaquin Valley fields to some point in the Carribean Sea outside Tampico. That is to say, that if a vessel were loaded at Port Hartford for New York City, the freight rate from Port Hartford to such point would be at least 25 cents per barrel, gold. Add to this 22 cents per barrel pipe-line charges from the San Joaquin Valley fields to Port Hartford.

California Developments During June

Standard Oil Company's New Office Building in San Francisco
As it will look when completed.
From Photo by courtesy of Standard Oil Company

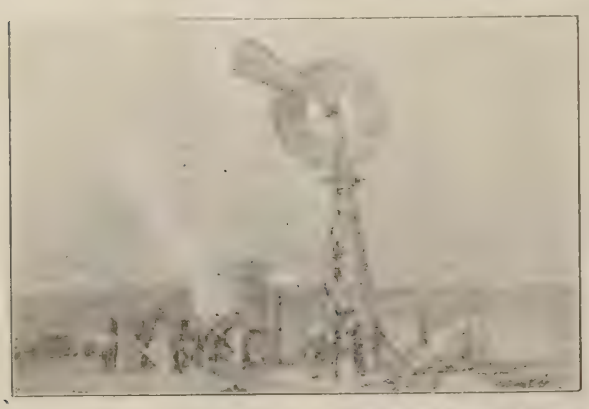
The recent purchases of oil lands, contracts for oil, and general investments made by the Standard Oil Company in California should be cheering to the most pessimistic, inasmuch as the estimated amount which the great company is now investing will total at least $5,000,000. Nearly 1000 acres, purchased at a price said to be $600 per acre, at Manhattan Beach, have been purchased by the company for a refinery site, as chronicled in the last issue of this magazine. We show herewith a photograph of the new Standard Oil Building, which is to be erected at the corner of Bush and Sansome Streets, San Francisco, the construction to cost $600,000 to $700,000; the price of the lot was stated as $300,000 by a Standard official, making a total investment for the building of at least $900,000 and probably $1,000,000. A new pipe-line from the San Joaquin Valley fields to Richmond was completed recently, and the Standard can now care for 50,000 barrels of oil per day, according to Mr. Wm. Edwards. The new line is now running oil. The refinery at Manhattan Beach, it is stated, is now being graded for; the estimated cost of this refinery is $3,000,000, and the cost of the land upon which it is situated will probably bring the total investment on the part of the company to $4,000,000. While the headquarters of the company will remain in San Francisco, where the new office is to be constructed, nevertheless the Southern end of the State is taking a great deal of money from Standard coffers at the present time. It is said, altough we have not verified the report, that Standard will soon begin to construct another pipe-line from Midway to the Manhattan Beach refinery, and from there into the Fullerton field. Standard is increasing its storage capacity very rapidly. On the whole, the company is making investments which should give an impetus to the entire industry and which should be of great benefit in restoring flagging confidence—if such there be.

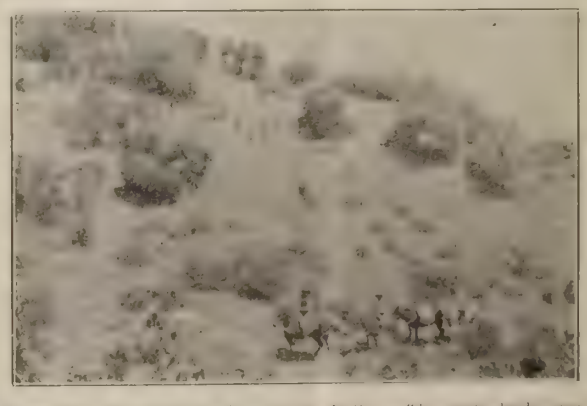
In the Fullerton field the Standard recently secured two new leases, one, the Dehm tract, consisting of 35 acres, the other belonging to the Proud estate. Negotiations for other tracts are said to be pending. Pipe is reported now on the ground for the construction of a pipe-line from the Fullerton to the Olinda and Brea Canyon districts. In the Whittier district the Standard has contracted for the entire production of the Central Oil Company.

Our Seattle correspondent sends us the following concerning Standard Oil operations in the north: (We do not vouch for same).

The company has contracted to furnish the Copper River & Northwestern Railway with California fuel oil to operate the line from Cordova to the Bonanza Copper mine. Second, it is stated that the Standard has purchased 100,000 barrels of Katalla, Alaska oil, for refining purposes. Third, that the company will invest $1,000,000 in improvements in the Northwest. Fourth, that Standard Oil and the Royal-Dutch are already "mixing it" in Seattle; both concerns, states our correspondent, have purchased sites at Richmond Beach, and, as usual, Standard has out-pointed the competing company by purchasing all around the latter's site, thus making it almost impossible for the former to do any great amount of business. It is stated that the home company will erect 300,000 barrels fuel oil tankage immediately, and that a new oil tanker is now on the way from New York to engage in the carrying trade from San Francisco to Seattle, where Standard does a very large business.

Selecting the Route for the Guaranty Pipe Line from Midway to the Sea

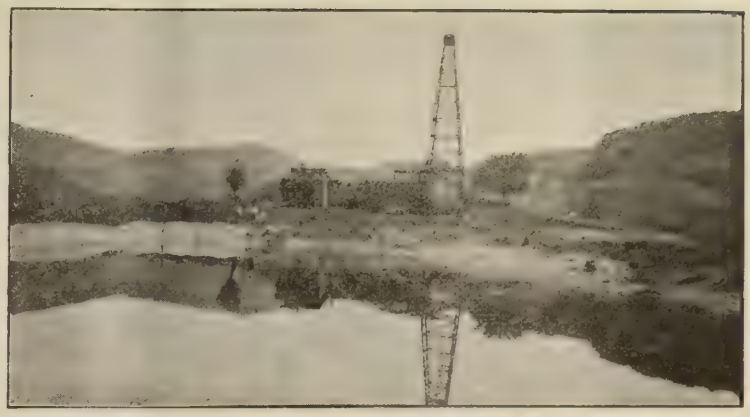




Engineers for the Guaranty Pipe Line Company are herewith shown on their selected route through the Cuyama Valley. The route leads over pine mountains at an elevation of 5000 feet, into the upper Ojai Valley and thence into Ventura. The line will cost close to $1,500,000. It is hoped that it will be completed by January 1912.

Tampico, The Field of Great Wells.

The World's Greatest Gusher, the Llano del Portrero. Two of the four pipes leading from this 100,000 barrel well, now capped and under control

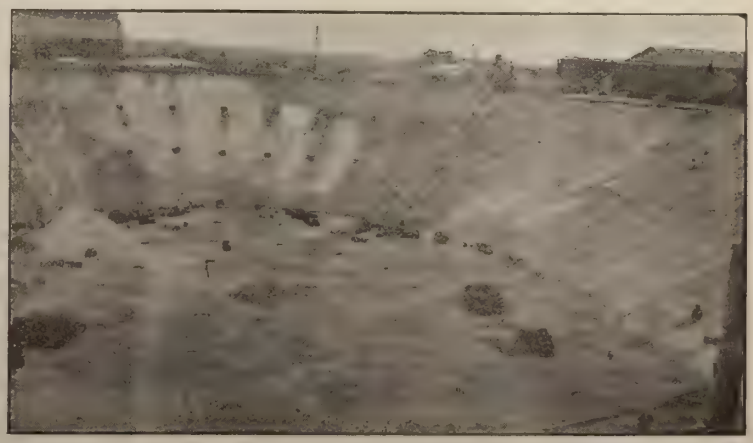


One of the wells of the Huasteca Company at Juan Casiano reflected in oil

One of the pumping plants on the Huasteca Company's line On Lake Tamihua, about 20 miles below Tampico

The War God of the Huastecas, now standing in the Plaza at Amatlan Thirty thousand human beings have been sacrificed to this ancient idol

Thirty thousand barrel stream of oil flowing from Huasteca No. 7 at Juan Casiano. The pipe shown is fifteen in. in diameter. Mr. Pete Spellacy and Mr. Flick, field foreman for the company



Inside of the great reinforced concrete tanks. The reservoir is 24 feet in depth and has a capacity of over a million barrels. Property of Mexican Petroleum Co. and located at Ebano.

Continued from Page 11.

These two sums equal 47 cents. Add to that the present price of California oil in the field and you have about the price of Mexican oil in the field, which per cent of prices, it seems to me, will be approximately maintained. In other words, that Mexican oil will always be worth something like 45 cents per barrel more than California oil on an export basis alone.

Possible Consumption.

The amount of oil that could be consumed for fuel on the Atlantic ocean alone is enormous. Just how much it is impossible to state, but it is well to remember that the reports of the United States Navy Board, which can certainly be taken as careful, conservative and exhaustive, state that if all the oil produced in 1909 were consumed as fuel, it would displace not over three per cent of the coal used the same year. If this be correct or even approximately so and we have every right to presume that it is correct, there can be no danger of overproduction of oil from the fuel standpoint alone.

Problem of Overproduction One of Transportation.

I have always maintained that there cannot be an over-production of a staple commodity; that it is a question of transportation only. There have been times in Kansas and in other great corn producing States when corn was with difficulty sold at 10 cents per bushel, and in many cases, it was burned for fuel. At the same time, there were millions of people some place in the world who could have paid a reasonable price for that corn for food if it could have been delivered to them regularly and cheaply. If the railroads to the great Northwest country were torn up, there would be an over-supply of cereal crops in that country immediately. If coal could not be transported from the mines, there would be an over-supply of coal in that particular section. If the steamships were to go out of business, cotton would be worth practically nothing in the South instead of being worth 12 to 13 cents in the field, as at present. So it is with oil. There can be no comparison between oil and coal as a steam raising agent, and steam is the power that turns the wheels of varied industries the world over.

Mexican Transportation.

It is a question in the United States of pipe-lines, storage and ships. In Mexico it is largely a question of storage and ships. While pipe-lines are necessary there, there are no mountain ranges to cross. Much of the developed field is on navigable lakes and rivers; especially that portion along the Panuco and Tamesi Rivers is particularly favored in this respect. Anywhere below Panuco or even for some distance above, after the snags are removed from the river, the tank vessels can be loaded either from the wells or the storage tanks and can proceed to any port in the civilized world without danger at any time of the year either day or night, and vessel transportation is really the way to transport oil.

Even, if as at present seems entirely possible, the product of the Mexican field within five years is 500,000 barrels per day, that amount can easily be moved by a comparatively small number of ships. Six vessels of the Strombus or Pinna class, owned by the Shell Transport & Trading Company, can carry that much oil in a single cargo, the capacity of these vessels being about 85,000 barrels each.

Plans of English Financiers.

There is already a movement on foot among a syndicate of Englishmen to organize a transportation and refining company with headquarters in London, to operate in and from the Mexican field. If their designs are carried out, they will have two pipe-lines, one from the north and one from the south into Tampico or to some other point on the Panuco River not far from that city. Their plans include the building of 100 tanks, each having a capacity of 50,000 barrels, and the building of fifty ships, each having the same capacity. With this fleet of ships, which would be comparatively small ones individually, they can fill orders in almost any of the known ports of the world, as a vessel can easily be constructed to carry 50,000 barrels of oil, that can enter either shallow or deep draught ports, as is desired, and while this one company cannot, of course, care for anything like the enormous amount of oil already spoken of, several companies like this could do the work or the company could be enlarged, if necessary.

The cost of building ships to carry this oil would, of course, be very great, but there is nothing to prevent the vessels bringing a return cargo either to Mexican or United States ports, if the oil is delivered on the continent, and in any case, the expenses would be only a small proportion of the cost of building one Trans-Atlantic road, while the benefit to the industry, and incidentally, the profits to the transporting companies, would be enormous. Such a vessel could probably deliver oil from the port of Tampico to the port of New York for something like 25 cents per barrel or about the equivalent of 87½ cents per ton of coal, to say nothing about the comparative advantages or value of the two fuels. Coal cannot be loaded and unloaded for this amount, handled as would be necessary, several times, even if the actual freight were not taken into consideration.

Conclusion.

I believe that there are going to be tremendous fortunes made in Mexico during the next ten of twenty years. California has produced an enormous amount of wealth in the last ten years and will within the next. A great number of men have been made immensely wealthy from the product of the California fields and thousands of small investors are and will be for years to come receiving monthly dividends on carefully purchased stocks or shares in various companies. I believe that Mexico in the next ten years will be something like a duplicate of California in the past ten years, but will naturally be on a larger scale, as the oil producing area is greater and the business is more thoroughly understood and will, for that reason, be developed more quickly.

A MYSTERY.

If the reader will turn his eye to the stock market quotations and look them over carefully, if he knows anything about California oil conditions it will probably puzzle him to determine why anyone would offer good stocks as low as some **very good stocks** are now being offered on the stock exchanges. Even with the great amount of oil on hand, with the Independents in their present indeterminate condition, and with everything else that can be counted on to dissipate any dreams of early unearned wealth, the prices at which good oil stocks are now being quoted are a mystery. Has the general public lost entire interest in oil? Or is it merely the swinging of the pendulum from frenzy to apathy? Certainly, from an investment point of view, there never was a better time to purchase **good** stocks which will, in time, return a great profit. But the public can not seem to assimilate the idea. We fear, in these times of the rabid investment smasher, to say anything further, but know, for ourselves, that oil must "pick up" sooner or later; and if a good stock is purchased, it will doubtless be "sooner."

May Exports of Mineral Oils from San Francisco.

During the month of May, 1911, 10,832,449 gallons of crude, napthas, illuminating, lubricating and paraffinous, and residual oils, valued at $277,515, were exported. This is a drop of 1,054,566 gallons from the exports during the corresponding month last year.

A trial voyage is being made at the present time from Rouen, France, to Philadelphia, by a French bark fitted with gasoline engines. Particulars of their make will be given out when the voyage is completed.

The British Consolidated Oil Corporation, Ltd., has closed its option on the Slocum and Aquilla properties, consisting of 1600 acres in Santa Paula Canyon.

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The Oil Authority of the Pacific Coast

Published Monthly

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Summer Numbers

During the summer months the **California Derrick** will run a lighter paper, owing to the slowing down of operations; we will give all the real news, but in a much more condensed form.—**The Management.**

A Few "Ifs"

If 35 cents per barrel is too much for the big marketers to pay the producers, the latter had better shut down until the surplus is not so great.

If the Independent Oil Producers' Agency is not satisfactory to the majority of those of whom it consists, they will doubtless attend to the matter themselves.

If oil producers believe that they can get a better price unorganized than through the present organization, they had better dissolve.

If oil is not worth producing, why are the great companies rushing work on their various properties? (See Guy Salisbury's report of the operations of the K. T. & O. Company).

We believe the four "Ifs" above will afford food for thought well worth the while.

An Ill Wind Helps Many People

Its an ill wind that blows no one good: The present surplus of oil certainly is a splendid thing from the point of view of the great marketers, refiners, and lastly, even the consumers. But this will probably be small consolation to the producers, although the fact that a surplus almost invariably induces a larger consumption, should cheer them somewhat, while the fact that there is but at most, six or seven months supply on hand, should aid them in maintaining their courage. Meanwhile the refiners and consumers will have their "innings."

Shell-Royal Dutch Competition

Everybody in the oil producing business in California is aware that there is not enough refining oil produced here to supply the gasoline demand of the Pacific Coast; and further, that the Standard has had to import gasoline constantly to supply its Pacific Coast trade. We might add that the Standard has been importing this oil from the Far East and that it has had a trade agreement with the Shell-Royal Dutch combination whereby that company furnished a certain amount of the imported goods. We understand that the agreement is about to terminate, and with the opening of offices by the latter company in Seattle, San Francisco, and other American cities, it is plain to be seen that the reduction on the petroleum import duties has brought its direct result in a competition which will probably be as keen as merciless, beginning with a fight for the gasoline trade of California.

Speaking with Mr. William Edwards, of the Standard Oil Company, recently, the editor of this magazine asked the representative of the Standard what would be the outcome of the competition about to be started. Mr. Edwards unhesitatingly replied that in all probability while the foreign company would start a fight for a gasoline trade, the chances were that once started they would not stop there, but would get as firm a foothold as possible. This will undoubtedly drag down the prices paid for oil at the well, here; and if a real "war" is instituted, we can look for a sharp drop all around; if the marketers reduce their prices, they will also cut prices to producers.

The Management of the "Derrick" regrets to announce that the scientific article on rectifying oils by a new process, now in use in this State, which we advertised would appear in this number, has been delayed in preparation, but will be published by us at as early a date as possible.

SUITS.

The following suits of interest to the oil trade have recently been instituted (or decided upon) for reasons specified:

Mercantile Trust vs. Hetch Hetchy Valley R. R. Co.

The Mercantile Trust Company, as defendant, has asked that $1243.10, due by the Hetch Hetchy Valley Railroad Company to the Sunset Road Oil Company, be paid to the trust company. The suit is that of the King Lumber Company against the railroad company et al. The trust company claims that it is the holder of bonds of the Sunset Road Oil Company and has foreclosed on the property, therefore, it sues to recover any moneys due to the Sunset Company.

Southern Pacific Gets Decrees.

Decisions quieting title in favor of the S. P. Railroad Company to certain parcels of land in Kern County, were recently handed down by Superior Judge P. W. Bennett, as follows:

Against G. W. Arbuckle et al. for the southwest quarter of Section 31, 29-23.

Against Hiram W. Wilson for all of Section 23, 9-13.

Against Wilhelmina E. C. Hendy as administratrix for the southeast quarter of Section 25, 32-25.

Against Philip Scheld et al. for all of Section 27, 9-13.

Against Amanda M. McNear as administratrix of the estate of Geo. W. McNear, S. Mitchell and Charles G. Wilcox, all of Section 25 and part of Section 35 in 28-28, Kern river field.

Against Henrietta N. Hobbs, Elvira W. Percy, Clarence Hobbs et al. for the northeast quarter of Section 35, 32-25.

Against Charles M. Stimson and George W. Stimson for all of Section 9, 11-14. The defendants are given 30 days from the date of the decree to purchase the land by paying $1976.74 which is yet due on the first contract.

M. P. Waite Sues El Dora Oil Company.

M. P. Waite, well known oil operator, is suing the El Dora Oil Company, claiming ownership of the land on which the company is operating, on Section 32, 12-23. Waite claims that he made mineral discovery last November. The El Dora Company is said to be insolvent.

Edwards vs. McGinn.

Albert C. Edwards, by his attorney, S. Wyman Smith, has filed suit against Thomas McGinn, S. H. oardman, R. F. McLeod, G. S. Tyler, R. C. Reid, R. D. Blake, R. M. Brown and E. Reid to quiet title to the west half of Section 8, 28-22, Midway. Edwards claims he took up the land under a desert land entry last November and soon afterward McGinn and his associates jumped the land. Later a contract was made between Edwards and McGinn and associates whereby Edwards was to be paid $500 for his expenses in making good his title to the land in the Visalia land office. Edwards alleges McGinn and associates failed to come through and he therefore wants his title declared clear and the contract annulled.—Midway Driller.

Pyramid Oil Co. vs. Crown Oil Co.

A suit against the Crown Oil Company, Chas. C. Spicer, W. C. West, Midway Prudential Petroleum Co. et al. has been instituted by the Pyramid Oil Company to quiet title to the northwest quarter of Section 30, 32-25, Midway.

It is stated that a well was left uncompleted which was to have been drilled on the property by Spicer. Operations were ceased on March 8th. On the 12th of May the Crown Company is said to have jumped the land. The Pyramid Company claims to have assumed possession the first of April, but was forced to give possession when the land was invaded by 25 armed men. The Midway Prudential Petroleum Company sued to oust the Pyramid, but injunction was denied and the Crown Company later took possession. The plaintiff contends that one well has been lost by defendants' illegal operations on the property and that the second well is in danger.

Standard Oil vs. Barlow & Hill, et al.

Standard Oil Company is suing Barlow & Hill, H. A. Blodgett, W. H. Morris and the Altoona Midway Oil Co. The suit involves the sale of oil from a 20-acre property o nSection 25, 32-23, Midway. Breach of contract is the cause of suit. Defendants have filed a long cross-complaint, alleging for one thing, damage to the extent of $380,000. A long and tangled series of events led to this suit.

Little Sespe Cons. Oil Co. vs. So. Refg. Co.

J. J. Bacigalupi, et al. are made defendants by an action instituted against them by the Little Sespe Consolidated Oil Company, claimants of 120 acres in Section 6, 4-19, Ventura County; plaintiffs allege they have suffered damages in the sum of $100,000 through defendants having "jumped" same, taking possessio nthereof and drilling a well thereon. A restraining order has been granted them by the court. The case should be settled at an early date.

Associated Loses to Coalinga Pacific O. & G. Co.

The Appelate Court has sustained the decision rendered by Judge Austin in favor of the Coalinga Pacific Oil & Gas Company, wherein it was decided that where a producer operates under a lease and contracts for the sale of his entire product, the contract includes the royalty oil if operator choses to make delivery, when the lessor has not demanded that he be paid the royalty in oil. The plaintiff company, being a lessee of the Southern Pacific Railroad Company, and paying a rental of one-sixth royalty on product, contracted to furnish its total production at 19c. per barrel (during the "poor" days), and made deliveries in excess of 308,000 barrels, after which it refused to make further deliveries under its contract calling for 300,000 barrels, whereupon the Associated demanded the value of the 49,000 barrels not delivered to it, but settled for with the Southern Pacific with royalty oil, the difference being some $20,000 in cash. The Associated lost, a verdict for $5849 including costs and interest on the excess delivery above the 300,000 barrels being rendered for the plaintiff. It might be noted that after the contract expired the Associated bought oil at the general market price of 40c. per barrel.

Good Roads in the Making

By D. Basil W. Alexander, Pacific Coast Chemist for the Barber Asphalt Paving Company

At the end of the article on "Uses of Asphalt," in the issue of "The California Derrick," for September of last year, the writer promised to extend the subject to the making of pavements: which is the subject of the present writing.

Before taking up the subject proper it seems advisable, in view of the great interest taken by the newspapers throughout California, and even Oregon, to touch upon the endorsement of the $18,000,000 State Highway by the people at the recent election. I will, therefore, direct attention first to the short, but excellent, article by A. S. Cooper, entitled "Asphaltic Concrete Roads," on page 4 of the April issue of this magazine. His one page contains a large amount of road knowledge, and thought for the receptive thinker; especially when he decrys the necessity to "go East" to procure an engineer to build our roads with our materials. Not that I wish to belittle the ability of the Eastern engineer, but we have here engineers fully as capable, and who perhaps understand better the requirements of climate, traffic and source and supply of materials. We are up against a different proposition in this sun-kissed land of ours, and moreover we know it.

The State reports for the past year as given out at Albany, N. Y., show that California is at present in the lead for moneys appropriated for the purpose of good roads by her bond issue of $18,000,000. These reports state that New Jersey spent $825,000 with uncompleted contracts of about $670,000; but repairs and maintenance amounted to over $1,400,000. That is to say, it cost almost as much to keep the roads in good condition as it did to put them so; it seems, therefore, wiser to build roads of a lasting material requiring no repairs (like the asphalt concrete as outlined by Mr. Cooper), than to scrape up dirt and rock and oil it, and then pay as much for maintenance as for building the road. It may be necessary to curtail the width in places in order to stretch out the appropriation. The width need not be more than ten feet in places, with oiled shoulders well constructed, and rolled; to permit the passing of teams. There need be no fear that a narrow roadway would localize the traffic to the extent of forming ruts, for it would not be sufficient, and in any case the natural elasticity of a good asphalt concrete would overcome any tendency in that direction. To ensure such excellence I cannot do better than quote Mr. Louis Jones, of Montecito, writing in the special Sunday edition of the Santa Barbara "Press," April 16, 1911. Mr. Jones says: "Having acted as one of the inspectors I was in a position to learn many valuable things about road building, and I divide that important art under two heads: First, inspection, and then materials." Mr. Jones is right, and on the State highway there will undoubtedly be good and intelligent inspection; and since the work, where let under contract, will be done presumably only by responsible contractors, there will be no reason why this State highway should not last a lifetime, and then some. It is not claimed that the finished road will not need to be patrolled; it will; every road should; as much to guard against the inroads of usage as against the thoughtlessness of ignorant vandals. A writer in the Yreka, Cal., "News" advocates the betterment of roads by protecting those they already have from the carelessness of the farmer who will allow irrigating water to run across the road, and cut it into gullies; such a one recently ran a disc harrow over a newly finished oil macadam road near Los Angeles. It should be more generally known that Section 55 of the Penal Code reads: "Every person who maliciously digs up, removes or displaces, breaks or otherwise destroys or injures any public highway is punishable by imprisonment in the State prison not exceeding five years, or in the county jail not exceeding one year."

Mr. Cooper points out a new advantage of the asphaltic covering in that any sharp projecting stone is not broken off and left sharper (and dustier) but is gradually pressed in until the road is absolutely smooth. As an illustration of another advantage a jubilant cry comes from Montecito that their recently completed 11 miles of good roads has resulted during the last five months in selling nearly $1,000,000 worth of real estate there; while from the Pomona (Cal.) "Review" comes a statement of the increase of business in restaurants and cafeterias directly due to the automobiling tourists since the road from Los Angeles was finished. One man is considering plans for doubling his seating capacity.

There has been a resolution adopted to be submitted to the State Commission on State Highways recommending that the $18,000,000 highway follow "**El Camino Real**" from San Diego to Sonora; this is one of the fanciful romantic movements afoot, which should not be seriously considered as it would entail a large amount of crooked work, and, therefore, increase the expense as the Missions were not founded with a view to the "most direct" route of Governor Gillett. Besides, except for a short length at San Juan Capistrano, there is no "**Camino Real**,"—it must be wholly supposititious. A further reason and a most weighty one, the present condition of these Missions is no credit to the State of California; nor does it reflect favorably on us who are responsible for it. We took them away from their devoted builders and turned them over to a "savage, sullen people" who left them to the ravages of the winters' devastating storms, and the no less insidious destruction of summers' penetrating weeds. There we left them, so that in less than a century none, no not one, is as glorious an heirloom as when it was bequeathed to us. No! rather let us guide our roads away from the scenes of our betrayed trust, and with shame hide them from the observations of travelers from other States and countries.

But I have gotten away from my original purpose which was to tell of the various processes by which an asphalt pavement is constructed from its raw materials on the Pacific Coast. I will treat the subject under two heads: Ingredients and Combination. These two heads will be further subdivided as follows:

Ingredients into asphalt, dust, sand and rock.

Combination into paving plants and street work.

Few people realize the amount of work and thought that has been entailed in order to bring modern asphalt pavement up to its present standard of recognized excellence; indeed, one division of the work itself does not know, nor could it do, the work that goes on in another division, that is only in the head of one man. Partly for this reason it is not the intention of this limited paper to go into the out-lying districts of such details as specifications, maintenance, cost, repairs, etc.

To be Continued

Judge Wilbur, of the Superior Court of Los Angeles, has ruled that persons who have received assignments of oil lands before the discovery of oil was made are entitled to the entire 160 acres, and cannot be limited to 20 acres only, as has been decided by the Secretary of the Interior. The case was one in which eight persons had filed on a quarter section of oil land in Kern County, seven of them finally assigning all their rights to the eighth, who, in turn was offered $80,000 for 40 acres of the land. A fight was then started by an assignor of the purchaser, who claimed that title to the 40 acres could not be given, owing to the departmental ruling assignments before discovery were not valid. The matter was carried to the courts, which decided as chronicled.

Sections 30, 31, 32, 11-23 are Busy.

There is a lot of development work going on around the Consolidated Midway's property on broken Section 2?, 11 23. Within three weeks 12 new derricks have been erected on Sections 30, 31, and 32, 11-23. It is probable that the Wellman Oil Company will shortly begin new work on the northeast quarter of Section 36, 12-24. The Consolidated Midway's gusher has been flowing steadily for the last three weeks at the rate of 2300 barrels daily. Mr. J. E. Koeberle said recently that the Consolidated well was the freest flowing well that he had seen outside of Palmer No. 1. Mr. Koeberle is superintendent of the Wellman Oil Company.

SUNSET-MIDWAY-McKITTRICK

A Brief Review of Recent Events

Maricopa Burns

Maricopa, famous the world over as the early center of all the oil operations on the West Side (of Kern County), has had a fire which was nearly disastrous, and the total loss from which approximated close on to $100,000. Mr. Fred Ball, chief of the fire department of the town, lost his life by electrocution, he coming in contact with a live wire while fighting the flames. The following firms and persons suffered losses: Maricopa Hardware Co., Bank of Maricopa, Gundlach Shoe Co., Model Cloak & Suit House, Wm. Carter, proprietor Carter's Hotel, C. W. Beatty, J. J. Harris, J. F. Feister, J. M. Bush, A. Zuckerman, J. Brodie, W. E. Stewart, A. Dennywood, B. Ferhstand, C. S. Garfield, Telephone Company, S. G. Rhymes, M. G. West, W. R. Jacobs, A. Comis, Messrs. Cox & Foster; the losses totaling individually from $200 to $30,000, on most of which insurance was carried. The region of devastation will be re built immediately.

Want New County

At a recent meeting of the Taft Chamber of Commerce a committee of two was appointed to secure data as to the method of procedure in forming a new county; the "West Siders" feel that they will receive more and better consideration if Kern County is divided, it is said. Taft would naturally be the new countyseat if the division program should be pushed through.

Prove Hills West of Maricopa

Coupled with the fact that the Union Oil Company sunk and obtained a good well near the center of Section 35, 32-23, last year, comes the strike of the Phoenix Interstate's well on Section 3, 11-24, which, according to experts in the field, proves the hills west of Maricopa, and makes valuable the territory of the Riverside-Maricopa and Los Angeles Midway oil companies, as well as much other property.

For all Standard Oil news which we have been able to gather, see article "Standard Oil Developments."

Reports Denied

A report that the Union Oil Company was seeking to purchase the Sunset Road Oil Company's bonds, which same bonds caused the temporary closing of the doors of the Kern Valley Bank, of Bakersfield, is denied by officials of the Union Oil Company. A report that the Standard Oil Company is seeking to gain control of the Union Oil Company is also authoritatively denied.

Splendid Well for C. P. Oil Co.

The Canadian Pacific Oil Company, of B. C., Ltd., continuing the excellent luck which seems to have blessed the operations of the British in California, have struck a splendid well on Section 4, 32-23, Midway. The well was finished at a depth of 312 feet and came in good for 1500 barrels of 27-degrees gravity, per day. Better than this, however, is the fact that the output contracted for to Standard Oil, which took 2000 barrels inside of 36 hours from the time the well came in. Another well will be drilled. The company possesses 60 acres on this section.

Midway Premier in Good Shape

The Midway Premier gusher is still flowing some 800 barrels per day and in addition the company has brought in several new wells, No. 2 having come in good for 1000 barrels per day, and the others being good producers. We have been expecting some good news from President Snyder lately, but same has been delayed and will be run in the next issue.

United Gets Big Gas Well

The United Oil Company recently struck a large gas well at a depth of 2625 feet on Section 20, 31-23, thus lengthening and widening the proven gas area of the Buena Vista Hills gas belt. The pressure was very strong, blowing the mud out of the hole and breaking the drill stem. Gas was first sruck in this well at a depth of 1800 feet and pipes were laid to utilize it, but the flow gave out, proving the gas to have been a pocket blowout; now that the proper depth has been reached it is expected that a well of the size of the Standard and Honolulu gassers will be developed. One of the most interesting features of developing the West Side of Kern County for oil has been the discovery of the marvelous gas resources which have come to view. In the early future the **California Derrick** will endeavor to give a few gas facts concerning California which will astound those not up with the times.

Honolulu's Gasoline Plant Being Installed.

The Honolulu Consolidated Oil Company is now having its gasoline plant, consisting of eight 80-H. P. gas compressors of the Bessemer Gas Engine Company's make, installed on Section 10, 32-24. These engines are to handle 4,000,000 cubic feet of gas per day, and from this amount expect to secure gasoline in commercial quantities; indeed, it has been estimated that they should be able to produce some 8000 gallons per day with the saturation calculated upon. The Honolulu is exceedingly fortunate to have struck an oil gas, inasmuch as the Standard, with the great gassers, is unable to "refine" it so as to secure gasoline, for the reason that their gas is almost a "dry" product. A most interesting write-up of the Honolulu's plant appeared in a recent edition of the well known **Midway Driller**, one of the most reliable oil papers ever printed in the oil fields

Oleum Oil Co.

The well of the Oleum Oil Company on Section 15, is down 1600 feet. Going down until they get the sand.

Reward Oil Installs Treating Plant

The Reward Oil Company have installed a 4-unit electric treating plant at McKittrick, for rectifying their oils. The plant is not yet in commission, owing to the fact that the San Joaquin Light & Power Company is not quite ready to supply them with the power to operate. This will be furnished within the coming ten days or so. The Petroleum Rectifying Company, of California, headquarters in San Francisco, installed the Reward Oil Company's plant. It is understood that other companies are about to follow the Reward, Lucile and the Coast companies which are now treating their oil by the same method.

News Notes from West Side Fields

The Associated Oil Company has a good well of light oil in the Elk Hills, on Section 30, 30-24, the sand being reached at 3150 feet, and the gravity being about 28 degrees. The well is good for about 500 barrels, at a conservative estimate. It proves the Elk Hills and enhances property values there very greatly.

The North American Consolidated Oil Company has a good well on Section 8, 32-23, at 2200 feet depth. An enormous flow of gas was also struck, 10,000,000 feet being estimated to have escaped the first day The oil is stated to test about 18 degrees gravity.

Bear Creek Oil Company, Section 14, 31-23, was due to bring in a well—No. 6—just before we went to press. No. 5 is still producing: rate, 400 barrels per day.

It is now stated that the Kern Valley Bank will liquidate, paying the depositors pro rata, as the money is available. It is expected that it will take, probably, as much as 18 months to wind up the affairs of the institution .

It is stated that the Western Water Company will begin delivering water to the city of Taft on or about the last of September.

The Midway Royal Oil Company, with 100 acres of property on Section 19, 31-23, adjoining the Associated on Section 30, has brought in a big well at a depth of 2914 feet, after penetrating the big sands 109 feet. The well is flowing by heads and is estimated to be a producer of about 800 barrels per day. A valuation of $5000 per acre is placed upon the property.

The Pyramid, operating on Section 18, 32-25, landed the eight-inch casing recently at a depth of 3000 feet, after 90 days' drilling. After landing the casing, and slightly beyond the 3000 feet depth, a gas pocket was struck which occasioned a heavy blowout. No one hurt.

The Dominion Oil Company, operating on Section 15, 31-22, North Midway, well No. 2, is making 350 barrels per day on the beam.

A large storage tank, property of the Santa Fe Oil Company, located on Section 31, and containing about 3000 barrels of oil, was destroyed the early part of the month by lightning, total loss of tank and oil approximating $11,500. This sort of destruction in this State is most unusual.

Well No. 71, North American Cons. Oil Co., Section 16, struck sand at 2200 feet; should be a good producer.

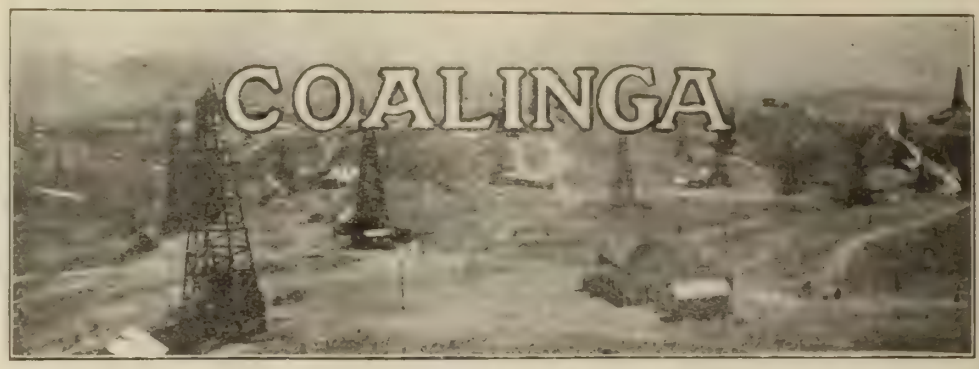
The Associated is using a Rotary-Standard Combination on Section 32, 31-23.

There is a report in the papers that the Standard Oil Company will build a new pipe-line from Midway to the Manhattan Beach refinery; report not yet confirmed.

The Union Oil Company is reported to have made a discovery of oil ten miles north of McKittrick, on Section 9, 29-21, gravity of 25 degrees. The strike amounts practically to the discovery of a new field. There is no rush on, however. Mr. Max Whittier is also reported to have found oil in this region.

The Belle Ridge Oil Company, between the Templor District and the Lost Hills Country, are reported to have an excellent well at a depth of 800 feet. The Belle Ridge is controlled by Associated people; a report that the Standard had purchased the Belle Ridge has been denied. It is said the company has tied up 30,000 acres of land in their region.

The California Consolidated, it is announced, will continue to make payments on the Mascot Oil Company, to the Spellacy's, Thompson et al. It is stated that the privilege of purchase has been extended indefinitely, affording Admiral Evans and his company every opportunity to make good on the purchase. Sale in the stock of this company wasgiven a bad setback by sensational and untruthful reports concerning it, at the time of the failure of Burr Bros., otherwise there is little reason to believe that it would not long since have secured the Mascot property. In order to make the success of the company an assured fact, N. F. Wilson, who promoted it, is said by the **Oil World** to have sacrificed $300,000 on the deal, which, it is said, would have been his share under the original agreement.



The News from This Field is Written By
GUY H. SALISBURY—California's Best Known Oil Correspondent

In company with several others, your correspondent has just made an interesting trip through the field, west side and east side, and noted the steady progress-making among the big companies; the smaller companies are not putting forth much effort to increase their production and in some instances are shut down. Most noticeable at present among the big ones from a development point of view, was the Kern Trading and Oil Company, who are today developing the lands of the Southern Pacific Company. There appears to be 27 strings of tools running on new work; usually, several strings are kept busy on a property of this magnitude in keeping the producing wells cleaned out.

K. T. & O. West Side Developments.

On the west side field, nearest the town, on Section 31,20-15, there are three producing wells, making a fine production, and eight wells drilling, with one new rig ready for the driller. Passing on to Section 25, 20-14: In the early days this whole section was under lease to Corey and Canfield; the requirements of the lease made it impossible to operate at that time and same was surrendered to the Southern Pacific. Corey and Canfield drilled two wells on this property, proving the territory. At this writing the Kern Trading and Oil Company have a very neat and substantial little town here; the buildings are comfortable, housing a number of men. There are 28 producing wells in this property, with four wells drilling. On Section 23, 20-14, we saw three wells producing; no new work was in sight. The oil on this section is of a heavier gravity than that on Section 31. On Section 19, 20-15, there are ten wells producing, with five wells drilling, four new rigs being rigged up for the driller and material on the ground scattered about for five new rigs. It is interesting to note that on this section the United Development Company, who are contesting the title with the Southern Pacific in the United States Courts, have one producing well, and one well drilling that will be in the oil sand shortly, also well No. 3 that will be started up again this month. From this section your correspondent traveled over to Section 13, 20-14. Here are 16 wells producing, also five completed wells that are temporally suspended, which belong to the producing list, and one well ready to spud in. On Section 7, 20-15, are three producing wells and three wells drilling, also three new rigs ready for the driller. There is material on the ground for about seven more rigs. Up on the hill, Section 31, 19-15, are six completed wells of which five are producing. This was at one time the El Capitan lease, which was taken over by the Southern Pacific about four years ago. On Section 3, 20-15, there is one producing well. This is in the deeper territory, just west of the W. K. Oil Company.

Report on East Side.

On Section 35, 19-15, there are four producing wells with two wells drilling. There is considerable activity about Section 11, 19-15, six wells producing with five wells drilling, and one drilling well temporally suspended; there are three new rigs ready for the driller. At the extreme north end of the east side field, Section 3, 19-15, they have two producing wells.

This trip of observation will disclose 81 producing wells for the K. T. & O. Company, 12 rigs ready for the driller, with material on the ground for 12 more rigs. Only seven completed wells are not producing; only one drilling well is temporally suspended. The 27 strings of tools running represent a very respectable pay roll. The company's field management is excellent, as is shown in this report. On each property competent men are in charge and everything is moving smoothly.

Standard Operations.

The Standard Oil Company, on Section 36, 19-15. Well No. 1, known as Sontag Well No. 1, was completed some months ago; Well No. 2 is now over 780 feet deep with 12½-inch casing. The Standard has ample knowledge of the formation in Well No. 1 to warrant drilling Well No. 2. The oils produced from the adjacent wells in this territory, that is, the Mohawk, those of the Turner and the W. K. Oil Companies, are sufficient proof to warrant the big company in developing the deep territory of Section 36. Much interest is being centered here; this development work may extend the field further east; it is in the light oil district and is proven territory, but so far the eastern limits of the territory have not been determined by the drillers' bit.

Coalinga Metropolis.

The Coalinga Metropolis Oil Company, Section 26, 19-15. Well No. 1 sanded up some time ago; the bridge formed by the gas pressure made it necessary to run the tools. The bridge of sand was broken and the water used in drilling out the bridge has been bailed off. The well will be given another opportunity to demonstrate what deep territory can produce. With the strong gas pressure in this well the management look for a big oil producer as soon as completed. The 40 acres in this lease carries a ⅛ royalty, payable to the British Consolidated Oil Corporation, Limited, at one time a part of the old California Monarch Oil Company.

Minuro Excites Interest.

The Minuro Oil Company, Section 24, 19-15. Well No. 1 is over 300 feet deep with open hole, at present shut down waiting for a large string of casing, as the territory is deep, producing light refining oil. Considerable interest is being centered of late on all property located before the September withdrawals, where actual possession has been had, but where development work has been held back in many cases waiting on government action. This property was located some years ago, a full heavy standard rig built, with the boiler and engine in place, all ready for operation; possession has been held continuously.

M. K. & T. Cementing Off Water.

The M. K. & T. Oil Company, Section 8, 20-15. The water is being shut off, cemented above the oil sand, in Well No. 1. It

is reported that the 10-inch casing in Well No. 2 is being loosened up, will be carried down and that the company will shut off the water above the oil sand; the well will be completed in the sand. This well came in a very good producer, making 200 barrels and better, of very fine oil, but water troubles began and have interrupted the production. Preparations will soon be completed for Well No. 3. Superintendent D. M. DeLong has demonstrated the value of the surface of this property by the numerous beautiful rose bushes on the property, also some very thrifty trees that adorn the property. As an oil property, Well No. 2 has shown its value.

Azores Oil Company's Well Very Deep.

The Azores Oil Company, Section 26, 21-15. Well No. 1 is 3810 feet deep with heavy 4½-inch California Special casing. The bit has passed through the big sulphur water sand and there has been a little blue shale, but is now in a hard shell. The company has had more or less trouble on this hole, the formation being new, but has stuck to the work and from the present showing in the formation, the management is confident of securing a good well producing a light oil. Mr. Will Keek has charge of the drilling and of the work.

Will Construct Reservoirs.

The Kern Trading and Oil Company will build their large earth re-inforced concrete reservoirs on Section 9, 20-15, instead of on Section 17, 20-15, and the contractors who will do the excavating are already getting material on the ground for the work. The work of rehabilitating the old earth reservoir of the Southern Pacific on Section 7, 20-15, is going on now. About 12 men are on the work filling in the cuts made to haul out the lumber when the Southern Pacific demolished the reservoir some two years ago. This reservoir will be trimmed up to receive the reinforced concrete which will make the old reservoir practical.

United Development Company Again Drilling.

The United Development Company, on Section 19, 20-15. Well No. 2 is again drilling. The water was cemented off at 2424 feet, 8¼-inch casing, was bailed out, and now appears to be shut off. Work will be resumed on Well No. 3 very soon; this well was left standing at 1400 feet with the 10-inch casing. Water is being furnished by Well No. 2 from between the 12½-inch and the 10-inch casing.

Coalinga Security Producing 200 Barrels Daily.

The Coalinga Security Oil Company, Section 8, 20-15. Well No. 1 has been cleaned out, was put on the beam about ten days ago and is now making about 200 barrels per day of oil free from water and silt. This is a very smooth oil, rich in by-products. There is an assessment now on of 5 cents per share delinquent July 3d; it is reported that this assessment will clear the property from debt.

Coalinga National Petroleum Company.

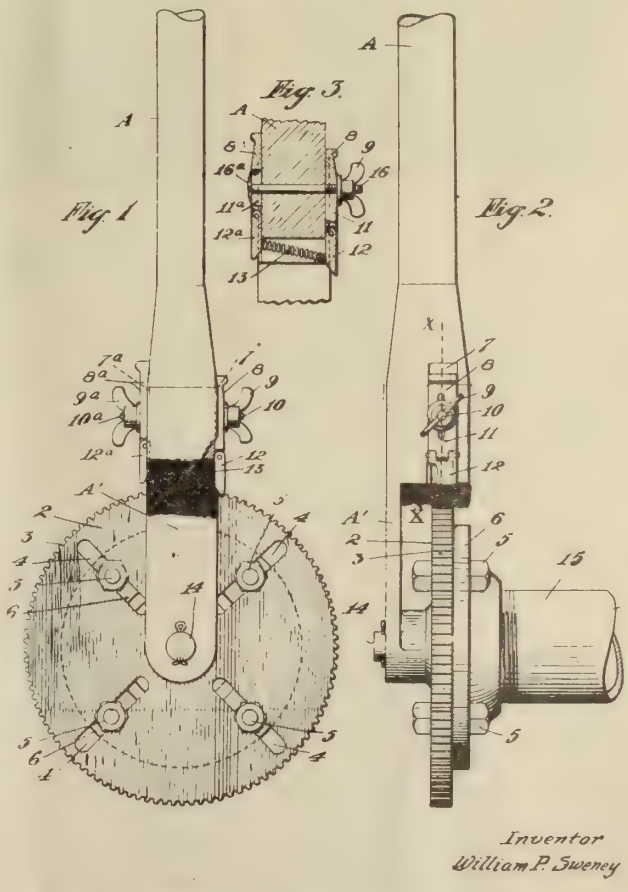
The Coalinga National Petroleum Company, Section 8, 20-15. Well No. 1 is being cleaned out, and there appears to be considerable work to be done on the well. Under the management of Captain Barneson the property will be rehabilitated and the well put back to production.

Hibernia Expects Shallow Well.

The Hibernia Oil Company, Section 2, 23-16, in the South Coalinga Field. Well No. 1 is down 1050 feet, carrying the 10-inch casing. The well is located about 2600 feet due east from the outcroppings. The formation, from the surface indications, appears to have flattened out considerable. The marine shells and fossils are the same as are encountered in the Dominion and the Southfields wells. The manager, after a careful study of the formation, reports to his company that the oil sand will be found at a much shallower depth than that encountered by the Smith and Bryner people on Section 33, 22-15. The sedimentary formation was penetrated at 78 feet; the water sand was entered at 28 feet and shut off a short distance lower with the 12½-inch casing. A good supply of fine water was developed, apparently inexhaustable, a valuable adjunct to an oil property. The lower shales are carrying 9-100 per cent oil, as shown by tests made by Superintendent W. A. Boole.

THE SWENEY DISC FLANGE SETTING TOOL

(Patent Applied For).



Four (4) standard sizes. Special sizes to order.

Of Interest to the General Pipe-Line Trade

The drawing above shows the **Sweney Disc Flange Setting Tool**, a device which eliminates all waste of time in setting Standard, Commercial, or Heavy Hydraulic Flanges and sets the flanges up tight without marring the surface or breaking out the holes, thus doing away with the trouble which so often happens with the old crowbar and bolt method prevailing.

It is hardly necessary to go into the details of the construction of this tool as a glance at the cut will show its purpose and the economical points to any lineman. These tools will take a pipe fron one inch to any desired diameter, in either commercial or hydraulic flanges. This tool is now being used by all companies in pipe-line construction. It is claimed that its efficiency reduces the cost of installation 30 per cent.

Sold by all dealers. For particulars, address **Disc Flange Tool Company**, 1129 Howard St., San Francisco, California.

Not Wanted in California.

The Gronna Land Bill, a bill introduced in the United States Senate, providing for the leasing of oil and gas lands, is obnoxious to California oil operators, and has been reported unfavorably upon by the committee to which it was referred by the Coalinga Chamber of Commerce. In our next issue we will give particulars concerning this bill.

W. D. MALTMAN

THE CALIFORNIA DERRICK'S EXCLUSIVE SANTA MARIA CORRESPONDENT

NOTE—Mr. Maltman is very well posted on all Santa Maria and especially Cat Canyon oil conditions, being an operator there.

Brooks Oil Company.

On the Guinn tract in Cat Canyon, the Brooks Oil Company have installed their compressor and air is being applied to Well No. 2, as a result the production has increased to 600 barrels a day with every indication of becoming a gusher at an early date. The gas pressure is very strong. Well No. 1 will be used as a water pipe well. The Brooks Company are delivering about 500 barrels of oil a day over their pipe line to Sisquoc Station, and in addition to their contract with the Smith refinery at Hadley, they are supplying fuel oil to the Princess Oil Co., Santa Maria-Midway, Cat Canyon Oil Co., Santa Maria Enterprise, New Pean and Santa Maria Petroleum Pipe Line Co., it is understood that they receive in the neighborhood of 85 cents a barrel for this fuel oil.

New Pennsylvania Petroleum Company.

At the Annual Meeting of the New Pennsylvania Petroleum Co. last week the old board of directors were reelected, T. R. Finley, President and Manager, E. Schillingsburg, Vice-President, Jos. McDonnell, Secretary, L. P. Scaroni, Treasurer, S. P. Calif, John Houk, and A. R. Jones, Directors. This Company has a monthly production of 11,500 barrels of 25 gravity from its four wells in the old field and have one well completed on its Cat Canyon lease, with every indication of a big producer The production is sold to the Standard at 50 cents a barrel.

Palmer Oil Company

The monthly production of the Palmer Oil Co. from its Blochman lease has been approximately 300,000 barrels. The company has over 750,000 barrels of oil in storage and have shut down their well No. 1 and No. 2 until the Associated and Union Oil companies move some of the storage oil. Wells No. 3 and No. 4 are being cleaned out in view of reopening them when the Company's pipe line is completed, and No. 5 shows every sign of being a big producer in the near future.

Palmer Union Oil Company.

Are preparing to recement their No. 1 well; their No. 2 is about to enter the oil sand and No. 3 is 2457 feet deep; the rig is up for No. 4.

Dome Oil Company.

In the old Santa Maria field the Dome Oil Company has a monthly production of about 45,000 barrels of high grade oil which is sold to the Standard at a good price. Their two wells in the Cat Canyon field are producing about 900 barrels a day; this production is being curtailed on account of market conditions.

Brookshire Oil Company.

In the old field the Brookshire Oil Co. have a production of about 18,000 barrels a day of high gravity oil. They are not doing any new development work here on account of their active work in North Midway

Pinal Oil Company.

From the wells in the old Santa Maria field the Pinal Oil Co. have a production of approximately 40,000 barrels a month, high grade oil which is sold at a substantial price. In addition to drilling two wells in this part of the field they are deepening their well on the Cat Canyon lease; at present it is 2250 feet and has a fine showing of oil sand. The Pinal Oil Company's property is reported to be under option for sale to an English syndicate. The company has paid to date $991,835.50 in dividends.

Palmer Annex Oil Company.

The No. 2 well of the Palmer Annex Oil Co. is down 2900 feet with an oil strata similar to that of Palmer No. 1 on the Blochman lease. Three other wells are drilling and three more will soon be ready to spud in. The most modern oil camp in the State is being erected by this Company and extensive storage facilities will be prepared, in addition to an asphalt refinery. The Pacific Coast Railway will extend its road from Sisquoc Station to the Palmer Annex property.

Dispatch Oil Company.

Well No. 1 of the Dispatch Oil Co. is down 2600 feet after passing through a most favorable formation.

Ideal Oil Company.

The upper water has been successfully cemented off in the Ideal Oil Company's well with a 10-inch casing at a depth of 2310 feet. Drilling has been resumed with 8 inch casing, and at 2400 feet an oily brown shale with heavy gas pressure has been encountered.

Los Alamos Oil Company.

On the Rossi tract in the Cat Canyon field, the Los Alamos Company have their No. 1 well well down 3200 feet. The gas pressure is so heavy that it has been impossible to bring the well in. Practically no work has been done on the property since the first of the year, due to the change in management, but it is reported that active operations will be resumed early next month.

Summit Oil Company.

The Summit Oil Co. operating on the Witzen tract due north of the Palmer wells in Cat Canyon is in an excellent oil formation at a depth of 2100 feet with their No. 1 well. This well will prove a vast amount of new territory, if successful.

Gato Ridge Oil Company.

On the E. E. Henderson tract just south of the Santa Maria Petroleum & Pipe Line Co.'s holdings, Well No. 1 has spudded in. On the John Bell tract the location for another well has been selected and material for rig building will soon be on the ground.

Carpenteria Oil Company.

Adjoining the Brooks Oil Co. to the south the Carpenteria Oil Company have entered a highly saturated oil sand at 2675 feet in their No. 1 well. The drill is still in the sand making it impossible to determine the thickness of the stratum. The well will be finished as soon as a satisfactory condition for landing pipe has been reached.

Santa Maria Enterprise Oil Company.

Adjoining the Associated-Williams tract in the Cat Canyon field Well No. 1, of the Santa Maria Enterprise, is down 2100 feet with 6-inch casing, the formation is brown shale with a strong showing of gas. The hole is in fine condition and rapid progress is being made.

Santa Maria Petroleum and Pipe Line Company.

Well No. 1 on the Henderson tract which has recently been purchased by officials of the Oro Water, Light & Power Co., will be used for a water well. Good headway is being made with Well No. 2. The Santa Maria P. & P. L. Co., own a large acreage of valuable territory in this field.

Princess Oil Company.

The Princess Oil Company, operating on the Muscio tract, south of Cat Canyon, has its No. 1 drill down 2350 feet and are drilling in brown shale with a very heavy gas pressure. This well has passed through 600 feet of oil sand, but no test of production has been made, as a richer stratum of sand is anticipated within the next 200 feet. On the Tunnel tract, two miles northeast of the Canyon Oil Company's property, Princess No. 2 is drilling at a depth of 1520 feet. The formation is soft blue shale, although the preceding hundred feet was a very hard formation. The well shows every indication of being a producer and the gas pressure is very strong. The bringing in of this well will prove a great amount of new territory and is being watched with very keen interest by Santa Maria operators. All surrounding land is being leased.

Santa Maria Midway Oil Company.

It is rumored that the Santa Maria Midway Oil Company have a strong showing of oil and gas in their No. 1 well at a depth of 1300 feet. The successful bringing in of this well, like many surrounding wells, will prove several hundred acres of intervening territory.

Cat Canyon Oil Company.

At present the Cat Canyon Oil Company are engaged in shutting off surface sands with the 10-inch casing at 1200 feet depth, or thereabouts; these sands have caused considerable delay but the job is nearing completion and drilling will be pressed forward. This property is looked upon as most promising. It is located just a mile and a quarter southeast of the Pacific Coast railway station at Sisquoc.

The Pacific Coast railway is surveying an extension of its road from the Sisquoc station to the Palmer Annex property. This will eliminate several miles of hauling for the operating companies and will establish a shipping point at the center of the producing properties.

RECENT PATENTS.

The following recent patents of interest to the oil trade are reported expressly for **The California Derrick** by J. M. Nesbit, patent attorney, Park Building, Pittsburg, Pa., from whom printed copies may be produced for 15 cents each.

Air life for wells, M. P. Bischoff and J. W. Reynolds, Oilfields, Cal., 990,830.

Pump, W. J. Lapworth, Pittsburg, Kansas, 990,886.

Slip socket, P. C. Speer, Hovey Township, Pa., 991,176.

Rope socket for oil wells, W. C. Butler and A. L. Eaton, Sistersville, W Va., 991,196.

Tank oar anchor, L. E. Keller, Oil City, Pa., 991,319.

Oil tank construction, J. G. Hitchfield, Berkeley, Cal., 991,507.

Pump for oil and like wells, C. W. Bell, Bartlesville, Okla., 991,600.

Safety attachment for gas pipes, E. R. Schoolfield, Carbon, W. Va., 992,069.

Pipe-lifting clutch, Rochus Schopf, Elizabeth, Colo., 992,070.

Pumping jack, H. G. Smith, Bartlesville, Okla., 992,075.

Combination standard and hydraulic drilling rig, W. B. Wigle, Lompoc, Cal., 992,527.

Pump plunger, Harry Mead, Coalinga, Cal., 992,576.

Oil pump, H. C. Clay, Columbus, Ind., assignor to Reeves & Co., same place, 993,292.

Well boring apparatus, A. G. Collins, Everett, Wash., 993,507.

Deep well pump, John Hahn, Los Angeles, Cal., 993,520.

Fluid packing pump piston, John Hahn, Los Angeles, Cal., 993,521.

Well drilling device, R. R. Sanderson, Orrville, Ohio, 993,882.

DEHYDRATION OF PETROLEUM BY THE ELECTRICAL PROCESS

ONLY PROCESS which not only removes all water and foreign matter from crude petroleum without detracting from its values or altering its natural constituents, but also raises the gravity (Beaume).

UNINTERRUPTED FLOW from well to run tank: this means minimum loss of oil by evaporation or seepage; no idle money in tanks or sumps, and no delay in making deliveries.

OPERATING COST is less than with any other method.

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Petroleum Rectifying Co. of California

San Francisco Stock Exchange Quotations.

Following are the latest quotations of such stocks as have met with inquiry on the San Francisco Stock Exchange. We might add that the shortness of the list shows how light the inquiry has been:

Company.	Bid.	Asked.
Associated Oil Stock	$51.50	.....
Bay City	.....	$ .70
Brookshire	1.15	1.20
Caribou	.....	1.20
Claremont	1.05	1.12½
Coalinga Mohawk	.....	1.00
Coalinga National	.....	.18
Cons. Midway	.....	.12
De Luxe	1.15	.....
Four	.09	.10
Illinois Crude	.18	.20
Maricopa National	.18	.21
Maricopa 36	1.50	1.55
Mascot	1.75	20.0
McKittrick	.11	.13
Monte Cristo	2.05	.....
Occidental	.15	.....
Pacific States Petroleum	.....	.28
Palmer	1.30	1.32½
Palmer Union	.50	.51
Peerless	.....	5.50
Piedmont	.....	.10
Premier	.50	.56
Republic	.48	.49
Sauer Dough	.....	1.75
Section 25	.....	35.00
Silver Tip	1.10	.....
S. W. & B.	.16	.....
Sterling	1.40	1.50
Superior	.....	.21
Turner	1.10	.....
United Oil	.....	.90
Wolverine	.40	.....
W. K. Oil Co.	.....	3.00
Yellowstone	.....	.12
Storage Certificates	.33½	.33⅓

Los Angeles Quotations.

Company.	Bid.	Asked.
Amalgamated Oil	$ 45.00	.....
American Crude Oil Co.	.....	.38
American Pet. Co.	41.00	42.00
Associated Oil	50.75	51.50
Bear Creek Oil & M. Co.	.....	.75
Brookshire Oil	.....	2.00
California Midway Oil Co.	.46⅝	.47½
Central	1.96	1.98½
Columbia	1.08	.....
Consol. Midway Oil Co.	.12	.12⅛
Continental Oil	.....	.33
Enos Oil Co.	.50	.....
Euclid Oil Co.	.....	.55
Fullerton Oil	.....	5.00
Jade Oil Co.	.29	.....
Mexican Pet., Ltd., "Prd."	72.25	73.00
Mexican Pet., Ltd., "Com."	36.50	36.62½
Mascot Oil Co.	.....	2.00
New Pennsylvania Pet. Co.	.60	.....
Olinda Land Co. (Oil)	.47	.48½
Palmer Oil Co.	1.25	1.35
Penn. Midway Oil Co.	.16	.25
Perseus Oil Co.	.....	.25
Pinal Oil Co.	.....	10.00
Rice Ranch Oil Co.	.25	.....
Section Six Oil Co.	.....	.10
Trader's Oil Co.	70.00	.....
Union	102.00	102.25
Union Provident Co.	101.50	102.25
United Petroleum	101.62½	102.50
United Oil Co.	.87	.90
Western Union	100.00	119.00
White Star Oil Co.	.25	.40

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HOMEPHONE

How long does it take you? The Homephone's automatic service is quick as a flash, accurate and secret. It is the most economical to use.

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For Sale.—A lot of practically new 9⅝ in. and 11¾ in. casing. Also, 6 in. and 8 in. drive pipe. Write for price and particulars. Pacific Pipe Co., S. W. Cor. Main and Howard Sts., San Francisco. 1.t.

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SAN FRANCISCO

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TUBING LINE PIPE

SPECIAL ROTARY DRILL PIPE

¶ All sizes, weights and kinds used in the California Oil Fields

¶ Special attention given to heavier weights for deeper territory

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All Sizes Interchangeable With Other Standard Makes

Illustrations for A. S. Cooper's Article "Uplifts and Subsidences".

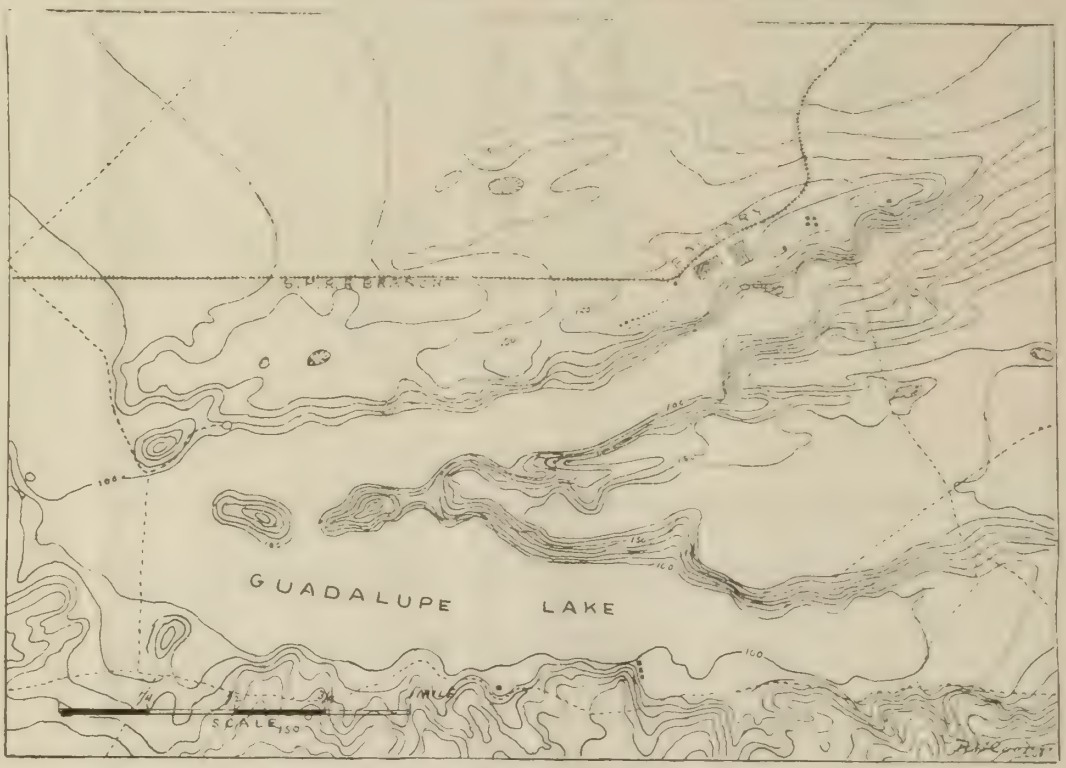
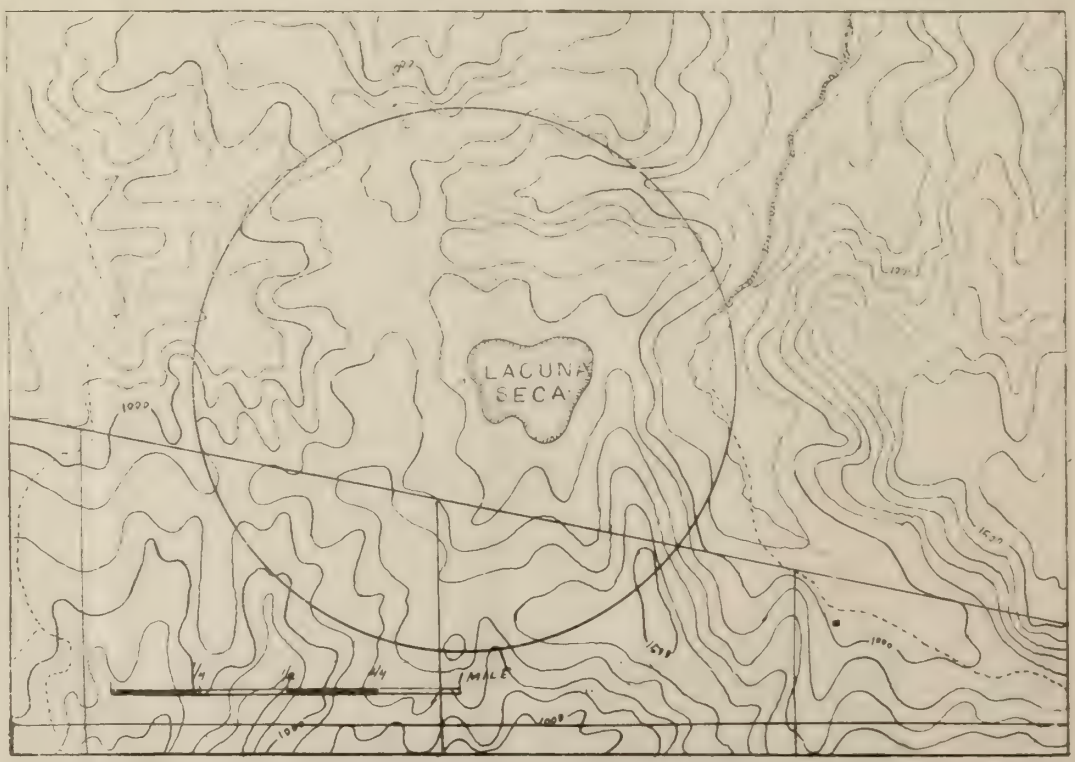


Figure 5, displaying Guadalupe Lake, a subsidence located five miles from Santa Maria, Santa Barbara County, California.



Laguna Seca, a subsidence located five miles from the town of Los Alamos, Santa Barbara County, California.

CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

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Uplifts and Subsidences

By A. S. COOPER, E. M., Ex-State Mineralogist of California

Guadalupe Lake—a Subsidence

The attention of the reader is directed to Figure 5, displaying Guadalupe Lake, a subsidence located five miles from Santa Maria, Santa Barbara County, California. This lake is shaped like the letter "V," each arm being about two and one-half miles in length. A fissure has opened along the northern side of the lake along a line at one time marked by springs which have since been replaced by artesian wells. The northern side of this fissure has been raised by faulting and now stands higher than the surrounding country.

The southern arm of the lake occupies part of a fissure which extends from the northwestern end of the lake to a point north of Mount Salamen and along the north base of the Mount Pinal Oilfield, a distance of 11 miles. This fissure is said to have re-opened in the year 1820, and must be of comparatively recent date, as otherwise, judging from the amount of debris that has been washed into the lake during the past 20 years from the high range of hills south of it, the southern arm would be entirely filled in. At the present time the sides of this fissure are quite precipitous in places.

At a depth of from 500 to 1000 feet the subsidence on the surface, due to coal workings, amounts to 50 per cent. of the thickness excavated. These subsidences have been known to continue for a period of four years. The contraction of a formation composed of equal volumes of shale and sandstone when buried to red shales is about one-tenth of its original voulme. Thus a formation buried to a depth of 1000 feet would be reduced 100 feet, or, taking the amount shown in coal workings, would give a subsidence of 50 feet in depth. Subsidences ordinarily have an area of but a few acres in extent, yet occassionally cover several thousand acres, while a not unusual sub sidence covers approximately only 50 acres. Many of them are found scattered throughout the Coast Ranges of California, and a number in the San Joaquin and Sacramento Valleys. When, as is not unusual, they form the beds of lakes or ponds, bubbles of gas can be frequently seen ascending through the water.

Subsidences and Earthquakes

On December 25, 1899, San Jancinto, Riverside County, California, was the scene of a severe earthquake. Simultaneously a subsidence occurred covering approximately a square mile, the phenomenon taking place some ten miles east of the town in the low hills at the base of the San Jacinto Mountains. The hills seem to have sunk from 30 to 100 feet, the subsidence being shown by the perpendicular bluffs marking the magnitude of the depression. The whole area seems to have gone down as a mass, the ground, in many places, presenting the appearance of being plowed, and a number of small fissures being in evidence. One of the largest of these is several feet wide and nearly a mile long, with a depth varying from ten to fifty feet.

Water Subsidence in Earthquake of 1906

On April, 1906, when the great earthquake that wrecked San Francisco occurred, the water in the bed of the Mokelumne River, near Woodbridge, subsided 20 feet; and the water in Tracy Lake, five miles northwest of Woodbridge, receded to a still lower level. Portions of the island of San Miguel, lying south of the Santa Barbara Channel, subsided within the last ten years.

Five miles southwest from the town of Los Alamos, Santa Barbara County, lies Laguna Seca, shown in Figure 6. During wet years a small lake occupies this subsidence, which is near the axis of an anticline. The surrounding hills indicate that the bottom of the lake has sunk 500 feet. A number of severe earthquake shocks in 1903, which occurred in the vicinity of the lake, in one instance at least, allowed an escape of gas which shot pieces of shale into the air, throwing two witnesses into consternation. Like instances of this nature can be recalled **ad infinitum.** For example, a spot of land on the Western Coast of the Island of Trinidad, nearly halfway between the capital and an Indian village, suddenly sank, to be replaced by a lake of asphaltum. This occured some 80 years ago; it appears probable that at an earlier period a similar subsidence may have given rise to the Great Pitch Lake of Trinidad, the cavity being gradually afterwards filled with asphaltum.

Still again, and within the memory of man, Reelfoot Lake, in the northwestern part of Tennessee, sank about 13 feet. This lake is 20 miles long, and, in places, five miles wide.

An Explanation of Figure 7

Figure 7 shows a subsidence surrounding the Island of Mescaltitan, eight miles west of Santa Barbara. At A, small veins of asphaltum are to be found in the bluff. At B, the water in the **estero** is in a constant state of ebullution from escaping gas. About a mile east of B, many thousands of tons of asphalt rock have been mined from the veins in the shales of the ocean bluff and from the surface, where it has exuded from the veins.

Oil Indications in Africa Similar to California

M. J. Stevens, speaking of oil indications found in Eastern Orange River Colony, Africa, says:

"The Faroo tableland is distinguished by many small de-

Figure 7, displaying a subsidence surrounding Island of Mescaltitan, eight miles west of Santa Barbara, Cal.

pressions called pans. On the shores of these pans, in the northern Bethlehem District, remarkable evidences can still be found of an oil containing stratum beneath, by small pieces of earth saturated with petroleum which must have been formed by the oil floating on the waves of the water with which these pans were formerly filled. This can be proven by the deposits not being found above highwater mark, and also by its pres-

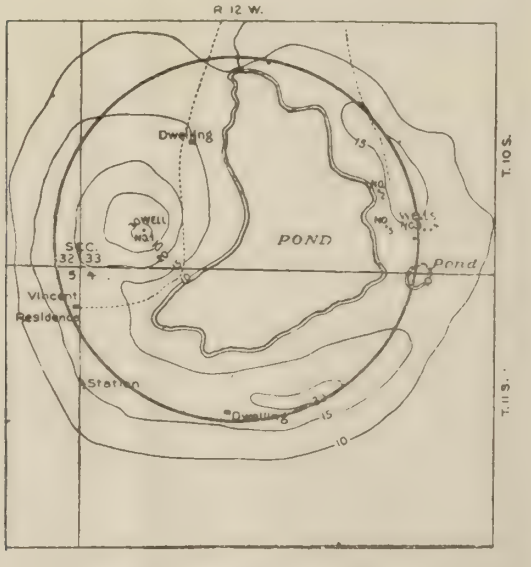

Figure 8. Map of Vinton Mound, La., displaying truncated dome made by an uplift and partial subsidence.

ence only on the side of the shore which lies opposite the main direction of the wind. In former years the process was going on uninterruptedly and the Boer farmers used these extensive deposits as fire material, as neither coal or wood exists in that part of the Orange River Colony."

Although the above description is rather meagre, undoubtedly these pans are subsidences.

No Attempts to Develop Either Uplifts or Subsidences for Oil in California

In California, up until the present time, the lands in the vicinity of these subsidences have not been developed for oil or gas, but in Texas and Louisiana, a number have proven prolific oil and gas fields, although not recognized as uplifts or subsidences in either of those States. The Coastal Plains of Texas and Louisiana consist of unconsolidated clays, sands and marls, dipping at a low angle towards the Gulf of Mexico; the plains are not without a number of subsidences withi thne latter of which are various secondary minerals, crystalline limestone, sulphur, gypsum, salt and petroleum oil. Outside of these subsidences but little quantities of the secondary minerals are to be found.

A force, derived from whatsoever source, strong enough to uplift these mounds, would be sufficient to compress the clays, sands and marls of which they are formed, so as to render them impervious to the ascent of liquids or the reception of secondary minerals. Room for the reception of the secondary minerals must have been provided by another action besides an uplift, which, judging by the discovered conditions must have been made by subsidence. In order to make room for the reception of the secondary minerals the clays, sands and marls had to be removed from beneath these mounds. This could only be done by subsidence. Further, the clays, sands and marls in the subsidences were in all probability deposited nearly horizontally, the same as the adjoining strata, but are now distributed promiscuously.

An Explanation of Figures 8 to 11, Inclusive

Figures 8, 9, 10, and 11 are taken from Bulletin 429, of the

FOR SALE.—Star Drilling Rig No. 26 completely overhauled, and in first-class condition. Capable of drilling as per catalogue, 2200 feet. Good boiler and engine. Must be disposed of soon. Price exceptionally reasonable. Can be seen at any time here in city. Address, 1200 First National Bank Bldg., San Francisco, California.

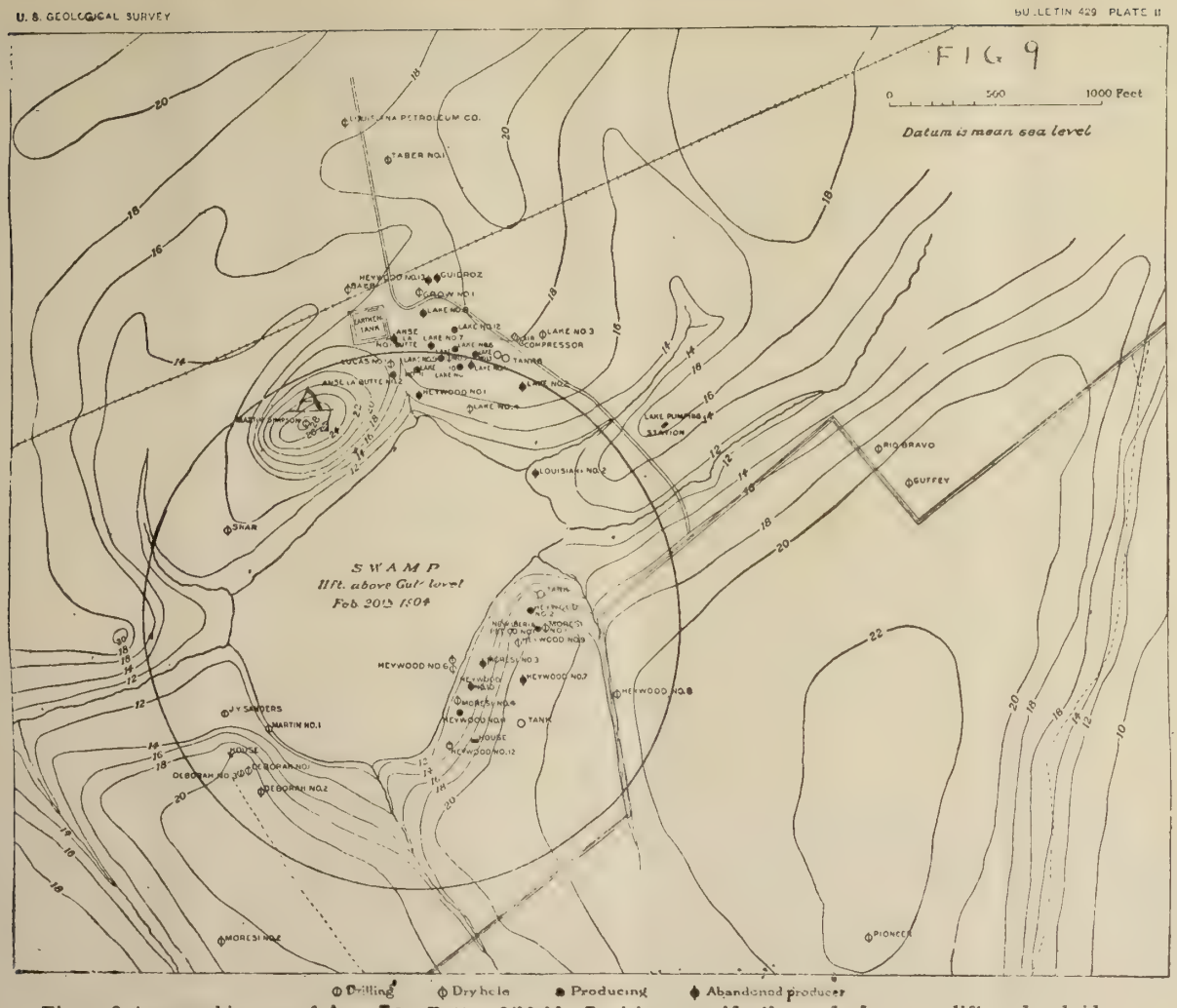

Figure 9, topographic map of Anse La Butte Oilfield, Louisiana; evidently made by an uplift and subsidence. Part of the uplift still remaining at "A."

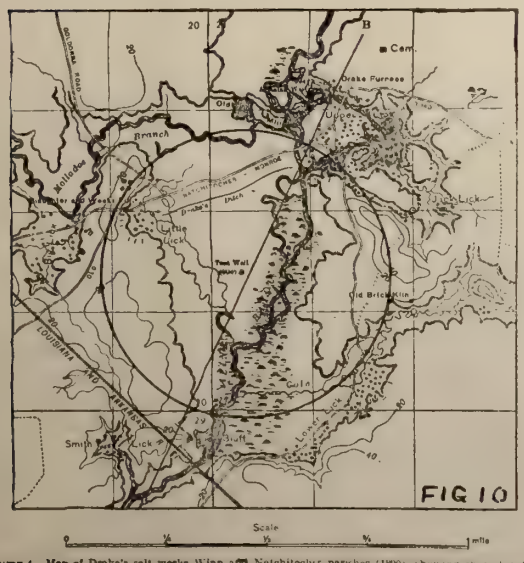

FIGURE 4.—Map of Drake's salt works, Winn and Natchitoches parishes (1899), showing characteristic symmetrical circular arrangement of shallow brine wells around the truncated domes of northern Louisiana.

Mr. Cooper says of this figure: "Evidently an uplift and subsidence."

United States Geological Survey, by G. D. Harris. They represent the following:

Figure 8—Map of Vinton Mound, Louisiana, displaying a truncated dome made by an uplift and partial subsidence.

Figure 9—Topographic Map of Anse La Butte Oilfield, Louisiana; evidently made by an uplift and subsidence. Part of the uplift still remaining at "A."

Figure 10—Evidently an uplift and subsidence.

Figure 11—A subsidence; depression is not made by erosion.

Gasses Found in Subsidences

The following named gasses are found in these subsidences: Methane (marsh gas); light hydrocarbon; sulphureted hydrogen; carbonic acid; carbon monoxide; nitrogen; hydrogen and oxygen. They occur in greater or less proportions and often with the absence of one or more. A majority of these gasses, and many times all of them, are found in the emenations from volcanoes, mud volcanoes, solfatavas and flows of natural gas. The fact that these gasses are found so many times associated, would lead to the belief that they had a common origin. All of them ,and many of the secondary minerals can be traced directly or indirectly to the action of heat on sulphur, calcareous, bituminous and carbonaceous matter; the heat being furn-

ished by dying, dormant, nascent and active volcanism and metamorphism.

In the areas of fumadolic and solfataric action, oxidation, carbonization, sulfuration, distillation and hydration are important re-actions. If sulphur, carbonaceous or bituminous matter and limestone are heated in a retort at varying temperatures, sometimes at a high heat and other times at a low one, all of the gasses mentioned, will be formed and will come from the retort. Also,—hydrocarbons will be formed.

(To be Continued)

It is now reported that a test case is to be made of the first withdrawal of oil lands by President Taft, on September 27, 1909, which it is generally claimed was illegal. Attorneys from Los Angeles will bring the test, as the result of the refusal of the Interior Department to grant a patent to the Lowell Syndicate for the final title to the ground leased and being developed by the Midway Northern Oil Company. J. M. Danziger states that the Lowel decision indicates that the Interior Department intends refusing patents in all cases where the work had not been stated on the lands withdrawn by the Sept. 27th order, prior to that date. Captain J. F. Lucey, it is stated, gained the opinion in Washington, from conversations with various officials there, that the President would not be adverse to revoking the Sept. 27th withdrawal, if sufficient cause were shown. As yet however, the suits have not been filed and no action is expected which will immediately effect the desired end.

A trust deed for $20,000,000.00 has been given by the Union Oil Company to the Los Angeles Trust and Savings Company, to secure the bond issue to that amount which the Union voted some few months back. The bonds are being floated by the Equitable Trust Company of New York, and the first $5,000,000.00 of them was oversubscribed. The money will be used to improve the company's vast properties aggregating more than 300,000 acres of oil lands, and other improvements, among them being mentioned by a contemporary, a refinery in the North, probably Seattle. It is also said that the Union will enlarge their Pacific Tank fleet, to keep up with their expanding trade; and that a pipe line will be built. We have no information however, as to where the pipe line is to be constructed. The Union recently secured quite a large contract to deliver oil to the Government, at a price said to be only 76 cents per barrel. The Union has leased the entire Graham Loftus tract in the La Habra Valley, consisting of 1,290 acres. This tract lies between the main Fullerton belt and the well recently brought in by the Amalgamated Oil Company. It is considered a splendid property.

Crude and Asphalt Exports from San Francisco

During June 274,526 barrels of crude oil were exported from San Francisco; value $223,985.00. Three hundred and thirty-seven tons of asphalt valued at $6, 133.00 was shipped to Canada, England and Hawaii.

The name of the English concern which took over the January and July oil companies in the Midway field some time ago, is the California Amalgamated. The company places a valuation on the combined holdings of $2,000,000. Both Ralph Arnold and Harry R. Johnson have reported the land most favorably.

A Broad Policy

Mr. R. L. Cox, manager of the Guaranty Oil Company, recently wrote us a letter which we think it would be of no harm to quote; he said: We feel at the present time that the outlook for the oil men is gradually growing brighter. The adverse conditions that we have been passing through have only rendered it more necessary that we should take full cognizance of all the different features necessary for success.

"We feel that there will be a gradually widening market and a strengthening of market conditions and increasing pipe-line and tankage and barge facilities, that will be so ample that overproduction will never have any terrors for us again.

"While in some sections of this State there have been considerable quantities of oil for a number of years, still, the oil business is in its infancy, when we consider that the gretat and heavy producers that would make us a factor in the international supply, are only 15 months old.

"Our plan is plain and fair and strong. It simply contemplates welding together small and expensive operations into a large and comprehensive, economical plan. First, production; then pipe-lines and transportation facilities, and then refineries and barges, following in their natural sequence, constituting absolute independence and prosperity."

DO YOU WANT CAPITAL? Have you oil lands for sale? Do you want to sell an allotment of stock to finance your proposition? We will handle, supply, finance or purchase any properties in the California Oil Fields, allotment of stock or corporation or individual interest. M. S. Lewis Company, 70 State Street, Boston, Mass.

California Production for and Field Operations During June, 1911

Kern River	Kern	13	21	1,592	8	2	1,164,150
McKittrick	Kern	7	21	159	2	2	399,620
Midway	Kern	32	220	447	25	8	1,768,973
Sunset	Kern	9	73	219	4	1	415,410
Coalinga	Fresno	17	126	704	9	..	1,461,580
Watsonville	Santa Clara	....	1	5	....	....	3,600
Arroyo Grande	San Luis Obispo	....	2	2	..	....	1,200
Lompoc	Santa Barbara	....	7	19	...	....	63,600
Santa Maria	Santa Barbara	3	43	145	1	1	428,720
Summelrand	Santa Barbara	....	1	130	....	..	6,300
Santa Paula	Ventura	3	40	266	1	..	41,853
Newhall	Los Angeles	....	4	76	1	...	12,072
Salt Lake	Los Angeles	....	11	256	1	....	228,285
Los Angeles	Los Angeles	....	....	415	...	..	35,920
Whittier-Coyote	Los Angeles	1	22	140	...	.	82,250
Puente	Los Angeles	....	...	56	.	.	2,600
Fullerton-Brea	Orange	4	45	254	3	1	577,945
Salinas Valley	San Benito and Monterey	....	2	..	....		
Repetto	Los Angeles	....	1	... ..	....	...	. ...
	Totals	89	640	4,885	55	15	6,694,078

Summary

	Barrels.
Stocks, May 31, 1911	37,204,426
Production, June, 1911	6,694,078
	43,898,504
Consumption, June, 1911	5,905,036
Stocks, June 30, 1911	37,993,468
Average daily production	223,136
Average daily consumption	196,835
Avarage daily surplus	26,301

Standard Oil Developments

The activity which the Standard Oil Company has been displaying ever since the rendering of the oil trust decision in the United States Supreme Court, is unabated. It begins to appear that the great company had jumped as though from a leash unfastened, upon getting the decision, for since that time there has been a wonderful increase in their operations.

Standard has won the suit instituted against it by the Buena Vista Land & Development Company, chronicled in a recent issue of this magazine. The action involved title to Section 20, 32-24, Midway, and Standard got the decision, which, however, will be appealed. In the Fullerton field Standard has many hundreds of acres either by purchase or lease, on which active development is being done. In Whittier the company has connected their four-inch pipe-line with the Central Oil Company's tank; the Standard has contracted for all the Central's production. This new pipe-line runs through the Murphy Oil Company's holdings, and, Brea Canyon.

The undoubted great future of the asphalt business in this State has presented itself forcibly enough to the Standard people to cause them to engage in it, according to accurate information. It is now said that in connection with the great Point Richmond refinery there will be operated an asphalt refinery, for which the sum of $750,000 has been set aside. California asphalt is, if not the best, as least the inferior of no other product of that nature in the world. That its future use is destined to a wonderful expansion is evidenced by the fact that California alone has voted to expend $18,000,000 on an asphaltic highway; such being the case Standard Oil evidences that same acumen in getting into asphalt that is shown by the company in every other direction.

Work on the El Segundo refinery is progressing rapidly. The competition which the Standard is constantly threatened with, does not yet seem to have advanced to any acute stage here. While the Asiatic Company, meaning the Shell-Royal Dutch combination, has purchased a small refinery site in Seattle, and while Standard has bought all around them, as related in the last number of this magazine, we have heard of no further inroads by the foreign concern on American trade; if the small start mentioned could reasonably be termed an "inroad." So far, all is peace; except right at home, where the Union Oil Company gives the Standard plenty of competition without much notice on the part of a press more interested in "gigantic foreign combinations," which can be featured in black headlines, than in the home competition.

The confidence displayed by the Standard Oil Company in their future in the California oil business should be of the greatest significance to the oil producers of this State. Standard by no means dominates in California, and if their outlook is so very bright that they can double operations, their neighbors outlook may not be as dark as painted by certain Eastern publications.

The cornerstone of "El Segundo" the Standard's new refinery now in process of erection at the Manhattan property purchased by the Company some time since, has been laid and a great force of men is employed to rush the work. The estimated cost of the refinery is now stated at $2,000,000.00; actual cost unknown. The date for completion is set at March 1st, 1912. Six hundred men and some five hundred mules are now working on the site of the refinery, grading etc., and it is stated by the Los Angeles Times that inside of six weeks there will be from 2,000 to 3,000 men employed there. Fifteen great stills will be operated by March 15th, next. Their capacity will be 5,000 barrels of crude daily, and it is planned to keep increasing the number of stills and consequent capacity of the plant until it is the largest in the world. Standard will no longer have to import gasoline to the Coast. Standard will be able to export as well as supply its great demand. Standard counts upon a huge increase in the demand for both refined and crude oils when the Panama Canal is opened to trade and is preparing to supply that demand. This preparation includes the immense storage now being erected, the new pipe line to be built from Midway to the El Segundo refinery, the new pipe line into the Whittier-Fullerton districts, the great shipping wharf to be known as the El Segundo Wharf. A water pumping plant, the largest in California, is embraced in the plans; it will be capable of lifting 5,000,000 gallons daily. The water will be pumped from the ocean and will be used to condense the fumes, after which, returning to the ocean, it will be used to run a turbine wheel generating one-third of the power necessary to to run the entire plant, a great economy. In addition to this there will be a fresh water plant capable of handling 500,000 gallons daily, for boiler and other uses to which salt water is unsuited. Railroad facilities with electric power are also included in the plans. The company is said not to be behind the townsite of El Segundo, which has been platted just north of the company's property, this being stated to be a private enterprise in which several individuals employed by the Company are interested for themselves.

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Isogeotherm Hypothesis of Mineral Occurrence and Origin

Origin of Petroleum, Coal and Other Carbonaceous Products

By WM. PLOTTS, Whittier, California

How Coal Occurs in Strata

Coal also occurs in a horizon which in its continuation, is independent of the stratification. It commonly occurs in the same locality with petroleum, and is always above the petroleum, usually 1000 to 1500 feet. Sometimes it is as much as 2000 feet above, and in rare instances, itis but a few hundred feet above, and slight quantities of oil have been known to seep upward into coal mines that had recently been opened.

The petroleum and coal horizons always parallel each other, regardless of the non-conformity of their horizons to the plane of stratification, showing that the relationship between them is intimate, as could not be otherwise; for in the various carbonaceous products resembling either petroleum or coal, it is difficult to draw the line, as there is a gradual blending of one into the other.

If we consider the limited areas of coal regions, and the still more limited area of the known oil-containing territory of the world, we must admit that if these two products occurred together in six or eight different regions, it would seem more than a coincidence. But when we consider that nearly all the petroleum of the world occurs in close proximity to coal, we may justly consider the fact of their relationship to be firmly established, and I will say more about this phase of coal and oil occurrence.

People past middle age who have been interested in geological maps have noticed that the "carboniferous" areas have enormously increased the last two or three decades, which time is remarkably coincident with the discovery and development of coal all over the world. This stretching of the carboniferous over what was formerly classed as permian, and devonian, reminds me of the professional "oil smellers." Those good old uncles, who formerly used a forked peach branch to "trace" the oil belt, now commonly have a much more elaborate and entirely inexplicable machine to prognosticate with and supply a long felt want of unsophisticated land owners. The point is this: the "uncles" display wonderful acumen in tracing the oil-containing belt or deposit, in so far as it has already been proven by the pioneer operator with his drilled wells; but there is no well attested case of their having been themselves successful as pioneers.

The extension of the carboniferous has evidently been for the purpose of bolstering up the popular (and precarious) notion that there was once an age or period of extraordinary development of vegetation; which belief was in its turn necessary to bolster the popular theory that coal represented accumulated vegetation in situ, a theory which has no basis in fact, as I intend to show, but which has acquired a widespread acceptation owing to a mass of apparent evidence which has appealed strongly to the superficial investigator, and owing to the persistence and industry with which this apparent evidence has been collected and advertised.

The more our knowledge of this old earth accumulates the less need we have for promulgating theories of special or exceptional conditions, and the writer who tells us of wonderful catastrophies in the dim past, no longer is honored above those who can only see evidence of an orderly course of nature, similar to what we can observe in our short time.

Coal, like petroleum, occurs in strata of all ages except the very youngest where there has not been sufficient time for the enormous subsidences, and subsequent elevations, with the attending erosion which is necessary to bring those products within our reach.

It is popularly believed that hard, or anthracite coal became differentiated from other coal by having subsided to a great depth after the carbon became fixed, and where the heat operated on it.

That the heat operated on it the same as on other coal, and no more, is what seems to be proven by anthracite that occurs above a petroleum horizon in the coast country of Colombia, near Barrenquilla, South America. The coal occurs sparsely at several places, apparently 600 to 800 feet above the oil horizon, which latter is well marked. The writer did not observe any, or hear of any deposit that was worth working, but it is there just the same. The strata is recent, probably tertiary.

The fact that sometimes coal is hard, at other times soft, or coking, or non-coking, or a worthless lignite, or merely a manifestation of coal, seems to make little difference in regard to its occurrence in orderly horizons and its relationship to other minerals, and the deep secrets of nature's processes are beyond our ability to fathom at present, except where we get the key to them in the plainest manner.

There has been much microscopic investigation of coal, with a view of studying its origin, but it is safe to say that the results have been entirely unsatisfactory, as they had a tendency to show that each different stratum was formed of different matter. This is exactly what might be expected, for coal is merely ordinary strata that has been charged, and which contains more or less clearly marked impressions of the coarser debris that the original sediments contained, the finer lines of the leaves or other debris being sometimes brought out by the black particles of coal on a background of lighter colored shale, in a wonderful manner.

The best examples of this seen by the writer (who has worked in coal mines), occurred in the shale, with only fine particles of coal matter to produce the markings, and as other strata, even limestone, contain impressions of vegetation, apparently as frequently as coal, why are not those strata coal, if such evidence of original vegetation prove the accumulated vegetation theory?

In some lignitic coals that might be designated as immature, where there may not have been sufficient time or other essential conditions to completely form the carbonaceous gases into "fixed" carbon, pieces of carbonized wood have been found, being of such a nature as to correspond with the rest of the coal seam. It is noted, however, that when wood remains are found above or below the coal, they are almost invariably petrified, silica having taken the place of the original chemical constituents.

Geologists have industriously gathered and placed on exhibition many exhibits which apparently evidence the correctness of the compressed vegetation theory, and a museum of mineralogy is hardly considered complete without one of them. Almost every geologist of note has gone into print endorsing the idea, which they will hardly abandon, until the oil men find it universally profitable as well as instructive to search for oil in horizons of former isogeotherm.

In the Royal Geological Museum on Germyn Street, London, there is an exceptionally complete series of exhibits, tending to show that coal is compressed vegetation, and if one-half of the labor and ingenuity had been bestowed upon showing that coal is merely changed strata, in which the chemical constituents had been replaced by carbonaceous matter, and that the

aggregate occurrence of coal in its continuance, in any region, represented a former isogeotherm, the theory would have been well proven.

There is one exhibit in particular, in the London museum, which is worth much study. It is intended to show that an intrusion of gabbro had changed the nature of the adjacent coal, but to a keen observer it only shows that the intrusion had occurred before the coal was there. The coal, which still adhered to the piece of gabbro, does not seem to have been changed by subsequent heat, its exceptional appearance (it is an odd looking semi-anthracite and is probably changed gabbro) having evidently created the impression that it had been changed be heat. Had the exhibit consisted of a large portion of the coal bed, with some of the intrusive rock attached, it would have been of much more value.

The great bulk of coal strata was formerly a soft, massive shale, or hard clay, of much uniformity of texture, which seems to have been best adapted to arrest and receive the carbonaceous matter, but in exceptional cases apparently any kind of strata turned into coal. Even coarse pebble, the waterworn roundness being well preserved, has formed coal.

A popular geological writer, who, of course, was an adherent of the compressed vegetation theory, having such a case brought under his observation, says: "In a period of elevation, the superincumbent strata must have been eroded away, and the coal bed cut into by a rivulet, which formed a bed of waterworn coal pebbles in the coal bed itself; after which the region subsided, and was covered by sediment as before." This is a sample of the immature reasoning that has established a theory which is actually taught in our schools. First, the coal was formed, necessitating a covering of thousands of feet and perhaps millions of years to compact the bed of vegetation into good coal: then erosion, which is so slow, that where our present coal beds have been cut into by erosion, it requires a practised eye to determine that there ever was a coal bed there, and the "blossom" has to be traced by drifting, often for a hundred yards from the surface, before any coal good enough for use can be obtained, the outcrop having been destroyed, or deteriorated, by access of air. It is well known that the best commercial coal deteriorates in value, by being stored in the open air, and for this reason arrangements are being made to store it under water. But entirely oblivious of the perishability of coal, this "authority" had the coal actually worn into pebbles by slow erosion, and then covered up by the settlings of erosion, without affecting the quality.

The popular hypothesis of coal origin as promulgated by the geologists of the last few decades is quite definite, and I think that I will not be charged with unfairness when I state that it supposes each bed or vein of coal to represent an accumulation of vegetation on the ground on which it grew: after which, the region subsided, and was covered with sediment which became the soil in which another accumulation of vegetation grew, when the region again emerged, etc. Those theorists neglected to make provision for preserving a sufficiency of vegetation from decay pending its submergence under the ocean, and when we consider the perishable nature of coal itself, to say nothing of vegetation, the idea seems absurd.

The immense amount of carbon contained in a large coal vein, and the small amount contained in a yearly growth of vegetation, must have rather queered the gentlemen, for they agreed that it took an enormously long time, which they reckoned into the hundreds of thousands of years, during which time the mass, which must often have been hundreds of feet in thickness, was in some inexplicable manner preserved from decay.

Now, the accumulation of such an immense amount of carbon by growth is an utter impossibility, owing to the limitation of fertility of the soil. Any good farmer can tell you that without the application of matter containing certain salts, the best soils would become unproductive, if heavy crops were taken off continuously. Before the vegetation would sufficiently decay for the salts to become again available, the carbon matter would all have escaped into the atmosphere. Then again, the large number of subsidences and elevations that, in some cases, would have to occur successively, during the building up of a very small amount of strata, is hardly consistent with our understanding of such phenomena.

The belief in the accumulated vegetation theory, seems to be based mainly on the fact that fossil impressions of vegetation are found to occur in coal, but they also occur intermittently in the whole series of deposits in which the coal occurs, as frequently as they do in the coal. In some coal, no fossil vegetation whatever can be detected, in other coal it is common. The same is true of the shales. Many geological writers have stated that coal measures (which term, if it means anything, means the coal containing horizon) were many thousands of feet in thickness, but we must consider their methods of determining the thickness, which was by aggregating the thickness of all the strata in which coal occurred at any point. Had the result been determined by drilling a deep well at any point that they might have selected in the coal regions, they undoubtedly would have found that the whole horizon of coal occurrence would have been confined to a few hundred, or at most, a thousand feet.

But the feature of the geologists' theory of coal origin, that is most opposed to reason, however, is, the emergence of those thin sheets of clay strata between some of the minor coal seams, which strata are sometimes only a few inches in thickness, and extend over large areas, and which, before they had hundreds of feet of covering were nothing but slimy pulp like occurs now on the bottom of the deep ocean, the only place where clayey shales are formed. The absolutely uniform texture of those shales would prohibit their formation in a lagoon, or in any other place whatever, except on the bottom of a very deep ocean, at a great distance from shore, and it is too much to suppose that in their emergence they would survive the wave erosion, of which I will speak further on. Some geologists think that coal-beds represent accumulations of driftwood, but this theory, also, presents insurmountable difficulties, as it would require the postulation of conditions enormously different from any we know of. But it is not necessary to further dwell on the absurdities of the compressed vegetation theory, although a book might be filled with them.

Coal sometimes, especially in much disturbed mountain regions, occurs in immense masses, in very limited areas. The name, "horse balls" applied to one series of them, will give the reader some idea of their form, which however is generally irregular. In most of such occurrences of coal, it is plain that there is little or no conformity of the coal, to the plane of stratification.

But there is hardly a coal-bed, or vein anywhere, that does not display in some portion of its extent, some uncomformity to the bedding, and I wish to call the reader's attention particularly to this point. It must be apparent to the careful student that if this is true, it alone, must establish the origin of coal in the manner herein set forth. If you enter a coal mine in the Pittsburg, Pa., district, and travel towards the south, you will notice by observing carefully, that the coal encroaches gradually on the strata above, and correspondingly vacates the strata below, until in the course of half a mile or so, the whole vein will be in different strata from where you first observed it. In other coal fields, where this non-conformity to the stratification is much greater, and the separate veins or beds of much less extent, the field is a succession of veins occurring in a series of benches or steps, generally overlapping each other, each vein conforming fairly well to the stratification, but the whole field throughout its continuance being sometimes as much as 20 degrees out of parallel with the stratification. It is in such cases as this that careless investigators have

stated that the coal occurred throughout a horizon of thousands of feet, when in reality the actual horizon of coal occurrence did not exceed a few hundred feet.

Now, the only logical deduction that can be made in regard to this occurrence of coal (and other mineral) in an orderly limited horizon, independently of the stratification, is, that it was formed subsequently to the formation of the strata with which it is blended, and at the time of maximum subsidence of the region, the coal field as a whole, was spread out approximately horizontal, parallel with the surface, but the stratification was not. (Strata of any considerable age is never exactly horizontal). Chemical investigation of a series of strata in which coal occurs, shows us that there is a great excess of free silicates in the strata adjoining the coal. The same is often true of iron ore. The shiny, greasy appearance of the cleavage is a manifestation of this change in chemical structure. Most of the valuable fire-clays, kaolins and soap-stones of commerce, accompany coal and iron ore in their occurrence, showing us the chemical changes that occurred, when the silicates, etc., were forced to vacate the strata, as the latter was taken possession of by the carbonaceous matter in its concentration.

If you take a good encyclopedia, and look over the mineral reports of various countries, like for instance, the Spanish American countries, where adverse governmental conditions have heretofore prevented exploitation, you may be surprised at the large number of regions that are reported to contain "coal and petroleum," or "coal and traces of petroleum." If you investigate further, you will almost invariably find that both these products occur in the same region, most commonly in the same locality, and a personal investigation will disclose that those products occur in the same general horizon, with the coal above the petroleum, and this, notwithstanding that the strata in which those minerals occur, are of the greatest variety of geologic age.

In some petroleum regions, there are only slight traces, or manifestations of coal, so far discovered; and in some coal regions, perhaps the oil is not in sufficient quantity to be profitable, but this should not detract from the significance of the apparent relationship.

In Great Britain, petroleum occurs in small quantities under the coal at some points, but it is of little value, being mostly of the oil shale variety, which has to be mined before it can be distilled. It is here that the coal bearing deposits, being confined within narrow geological limits, first gave the name "carboniferous" to the strata. The most important of the North American coal deposits were then exploited, and it so happened that they were in strata of similar age, as nearly as could be determined; and it was then that the belief was formed, that there could be no coal of any considerable value, outside of that series of rocks, and it began to be noticed that there seemed to be a relationship between the coal and petroleum. However, there was no getting around the fact that the Appalachian, and Middle West important coal deposits occurred throughout a stratagraphic scope of many thousands of feet, with the oil paralleling the coal at some hundreds of feet below. The coal of Warren and McKean Counties, in northern Pennsylvania, occurs in a plane of stratification, which, if continued south, would underly the various oil containing strata in southwest Pennsylvania. No coal, however, was ever found under oil, despite the fact that many deep (but futile) wells were drilled in middle and southwestern Pennsylvania in search of the oil, which, it was thought, ought to occur in continuation of the plane of stratification of the northern oil deposits.

In connection with this parallelism of the coal and oil horizons, it is well to remember that in many oil fields, the oil occurs too near the surface to admit of a coal horizon above it, the strata where the coal belonged having been eroded away ages ago.

No doubt the same coal horizon is represented by the coal of Pennsylvania, Ohio, Michigan, Indiana, Alabama, Kentucky, Virginia, West Virginia, Tennessee, Illinois, Missouri, Iowa, Kansas, Oklahoma, Texas, and perhaps other States. Oil occurs under the coal in all these States with the possible exception of Michigan. The strata in which these products occur, in this great area, can not by any stretch of the imagination be considered syncronous, or continuous, and although the coal and oil occur in patches only, with often wide areas that are barren, there can be no doubt that they represent on a grand scale, a former isogeotherm throughout this immense region.

Petroleum also occurs under coal, in Wyoming and Utah: and at several places in California, coal of an inferior kind occurs, if not directly above the oil, at least in continuation of the general horizon of carbonaceous products.

I wish particularly to call attention to the occurrence of coal in parallelism with petroleum throughout regions having surface strata of various ages, and the continuance, or at least corelation of the coal or petroleum horizons in strata of one age, to strata of a different age in adjoining locality or region. Also to the fact that the horizons of those products, although each may consist of several deposits overlying each other, both maintain their identity, and maintain an orderly distance apart over a considerable region.

Where the oil containing horizon has a considerable scope, the coal horizon also, has a considerable scope, and the two maintain a great distance apart; as in southwest Pennsylvania, and northern West Virginia, where the two horizons are about 2000 feet apart from center to center. In Illinois, where there is only a few hundred feet between them, the coal and petroleum are each confined to one or two deposits close together.

Many textbooks and geological reports and bulletins, although edited by persons who "never looked at it that way," are useful in showing that oil and coal occurrences in their aggregate continuance, represent former isogeotherms.

Most, if not all the metallic minerals, seem to occur in horizons, independently of the plane of stratification, like petroleum and coal. That is, each deposit of exactly like variety (if there be any two such in nature), has required like conditions of covering, heat, and other like conditions of environment. Carbonate iron ores: hematite, limonite, magnetite, etc., in infinite variety, occupy a definite position in relation to each other and to coal, lying above the coal at varying distances according to type, while another, and vastly different kind of iron occurs well down in the metamorphic rocks, where the heat was evidently sufficiently great to deposit it in a volatile condition analogous to our treatment of iron in the arts. The before mentioned iron ores which are plainly deposits of former gravel and sandrock, the substance of which has turned more or less into iron, may be said to be of "chemical" origin, but the fact that they occur in a definite limited horizon, independently of the plane of stratification, shows that their occurrences represent, in their continuance, a former isogeotherm. The carbonate iron ores are popularly supposed to be precipitates from iron-charged water that percolated into the strata that afterwards became iron, but consideration of the fact that coal and iron carbonates so frequently occur together, must show that there is a relationship between them.

Limestones of like type also occur in limited horizons: and, while a massive limestone deposit may closely adhere to the plane of stratification for a hundred miles, if it has extended out of conformity with the former isogeotherm, it will have changed its type; and as like as not another deposit, 500 or 1000 feet above or below the first, will have developed into the original type of the first deposit, defining the course of the former isogeotherm. It is more common, however, for a massive limestone to occur out of conformity with the bedding, when people who do not suspect its true nature often use it as a base for the determination of the position of other strata, with much confusion of understanding.

The text-books tell us that limestone is mainly or largely composed of the remains of marine creatures that lived—and

died—in great numbers at the time the said limestone was forming at the bottom of the ocean. But much contemplation and observation of limestone (which is a very indefinite term), shows us that it does not contain evidences of marine forms in greater number, or more frequently than other sedimentary strata.

It is common to see massive limestone, very pure and hard, without a trace of marine forms throughout its extent, while a few hundred feet under it will be found shales, sands and conglomerates, containing numerous shells of marine creatures, composed not of lime, but of silica. The Niagara limestone at Niagara Falls is typical of the kind that occurs so frequently in, or just above the petroleum horizons. To the southwest for hundreds of miles, the "Niagara" maintains its type because it conforms to the lines of a former isogeotherm, but to the south, it soon loses its identity, because it dips below the oil horizon. The mile-deep well near Pittsburgh did "not reach" it, to the astonishment of the geologists.

Where carbonate of lime is abundant in the horizons of coal and petroleum, it has changed shales into hard dolomites or other hard limestones; sand has been turned into sandstones; pebbles have been turned into conglomerates; etc. Four or five thousand feet higher in the series it occurs in a more or less chalky form, often in the form of concretions, which occurrence would absolutely forbid their formation by accumulation of limy marine shells. Many other forms of limestone occur so irregularly as to utterly preclude their formation in this way. If lime can leave, or be driven out of fossil shells through chemical action, can it not be driven indefinite distances through strata, to redeposit in strata containing no trace of marine forms?

Did petroleum, coal, limestones of similar type, and other products, occur evenly and continuously in their proper horizons, then, the fact of their occurrence on lines of former isogeotherms would be self-evident, but that perplexing old alchemist, the earth, has grouped them in such an irregular way, owing to causes that are not yet understood, that it requires quite an application to the subject to properly view them in this regard. Sometimes the carbonaceous matter in a series of deposits has apparently all, or nearly all, entered into combinations to form a limestone of massive form. At other places it has gone almost exclusively into an immense coal vein, or into a number of coal veins or beds, occurring one above another, sometimes several hundred feet apart, and varying in their character of composition, which probably accounts for their position vertically in the zone or horizon. At other places, nothing but petroleum is in evidence (this, however, is rare). Elsewhere, salt alone, or iron carbonates are found. Where all, or several of these products occur, they always occur in their regular order, the petroleum occurs below the coal, the salt between the two, or possibly sometimes below the oil. The iron ore, if a typical rematite, closely adheres to the zone of the coal, but if a limonite, it may occur 2000 or 3000 feet above it. Limestones of like type always are confined to a certain position in relation to the other products, but being of various degrees of pureness and composition, they of course, have a range vertically of many thousands of feet, as might be expected.

Many other non-metallic minerals of like type occur in definite limited horizons, independently of the plane of stratification. Mineral nitrates occur in this way. Their occurrence in quantity is, however, limited to regions where there is very little or no rainfall, as, if there was enough water to reach down in the earth, it would quickly dissolve the valuable salts. Common salt, soda, etc., are found outcropping only in desert countries for the same reasons, but are now largely obtained by shafting or boring through impervious superincumbent strata, below the point where the water has penetrated, because, of course, there was no water in those zones or isogeotherms, until they emerged and were eroded, the original sea water with which they were charged, when they were formed, having been dissipated as such, before they had reached their maximum subsidence.

The most common form of salt occurs in petroleum and coal horizons, sometimes in such enormous quantities, and in such purity, that the popular conception of its origin in desert basins must be wrong. Water found at great depths is almost invariably charged with some kind or other of salts which make it unfit for use. Close to the surface however, especially above the level of the deeper valleys, the circulation of the water in countries having a fair amount of rainfall, has removed the salts. All this evidences the truth of the theory, that the strata had subsided to where the heat or other factors of great depth and pressure, had operated to eliminate the uniformly brackish sea water that saturated the sands when the strata was formed. Sulphur and other substances that blend with coal, petroleum and many other products, could only have done so in a condition of volatilization.

Soils also, might advantageously be classified along lines of former isogeotherms.

(To be Continued)

General Notes from Various Sources

While the Government has not yet filed its pleadings in the case to determine the Southern Pacific's right to oil lands in the San Joaquin Valley fields, it is thought that they will be filed before the last of the month. B. D. Townsend, who was appointed to act with Francis J. Heney, in preparing the Government's side of the action, has made no statement in regard to the matter recently. The case is that of the United Development Company versus the Southern Pacific Company. The United operates in Coalinga on Southern Pacific property; that is, its Southern Pacific property until the case has been decided. The outlook is said to favor the prosecution.

The United States Geological Survey has just issued, as Bulletin 452, a report on "The Lander and Salt Creek Oil Fields, Wyoming," written by E. G. Woodruff and C. H. Wegemann. The report says that the development in the Lander field has iginally discovered here in 1833, was developed slightly in 1883- been mostly in the Southeastern District, and that oil was or- 1884, three wells having been secured, and that more development is now in progress. The oil produced is of an asphaltic base, and is similar in many respects to California fuel oil. The Bulletin can be secured on application to the Director of the Survey, Washington, D. C.

The town of Richmond, California, across San Francisco Bay from the city of San Francisco, is greatly excited by the discovery of what appears to be a huge deposit of asphalt, and an oil well. The town councilmen have investigated the deposit, in company with the manager of the Standard Oil Refinery, and have decided to test the value of the product by using it for paving a strip of street work. The beds of asphaltum lie about six feet beneath the surface of the earth and run to a known depth of 400 feet, according to the reports in the press. A well sunk on the "Blume" ranch, close to the deposit, is said to have good oil indications at 1000 feet. An "excitement" is "on."

The California-Fresno Oil Company's refining plant at Fresno burnt recently at a loss of $10,000 to the plant and a loss of $30,000 in gasoline and distillates. The plant will be re-built immediately.

Bulletin No. 60, of the State Mining Bureau, shows a value of $309,000,000.00 in petroleum from the first discovery of same down to 1909; it should show a total value to date, on the basis estimated, of approximately $362,000,000, or more than a third of a billion dollars.

The Santa Maria Gas Company has received a franchise from the San Luis Obispo County Board of Supervisors to lay pipes and sell gas in that county. It is planned to extend the pipes to San Luis Obispo, through Guadalupe.

It is said that the Government is to separate the surface rights from the mineral rights in the future disposal of coal, oil and other mineral lands.

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Paul W. Prutzman

Accepts Position on "Derrick"

Mr. Paul W. Prutzman, the well-known scientific petroleum expert, has accepted the position of Consulting Scientific Editor of the California Derrick. Mr. Prutzman has written some of the most valuable informative scientific papers for this magazine that have ever been printed in California for the oil men's benefit. Mr. Prutzman's services to the oil industry have been of a very high order, and his connection with this magazine is a matter on which we congratulate ourselves.

Mr. Wm. Plotts New Book on "The Isogeotherm Hypothesis"

There is appearing, in the present issue of "California Derrick," the second installment of a new theory on the origin of petroleum, coal and other carbonaceous products, penned by the hand of Mr. William Plotts, of Whittier (California). This treatise comprises matter which is of the strongest possible interest to the oil man and, incidentally to the scientist interested in oil from a purely speculative point of view as to its origin; also, the work will be of the greatest interest to geologists, albeit Mr. Plotts denies the value of geology to the oil man, in very positive terms.

Mr. Plotts is not unknown to California oil men; nor, we may say truthfully, to the oil men of the world, for he has spent a great part of his life in the oil and coal fields of various countries; and his name has appeared behind valuable articles ere this. Thus, what he has to say does not come from one who is a stranger, but one whose opinion is highly valued and whose studies have invariably been of interest and worth to the thinking oil man. Hence his latest work recommends itself before perusal; and afterwards, owing to its lucidity, the fact that it displays striking weaknesses in other theories concerning the subject with which he deals, and the remarkable personal and first-hand knowledge displayed, it is of far greater interest, commanding many readings.

In the "Isogeotherm Hypothesis of the Origin of Petroleum, Coal, and Other Carbonaceous Products," Mr. Plotts brings out with strength his conviction that petroliferous products are generated in the earth as the result of the application of heat on a plane of equal subsidence. As the book is appearing in these pages in installments, and as some of the most important paragraphs appear in this issue, we cannot see any object in reviewing that which can be had in its entirety for the reading. We suggest to those who have not already found out for themselves that there is something of especial interest in this treatise, that they turn over the pages and begin now; once interested it will be only a matter of sending for the June number of the magazine, or for the entire treatise itself, which may be had in Whittier, California. We are glad to add that a great deal of very favorable comment has reached us on Mr. Plott's newest work. It has excited general interest among the scientific men and practical men alike.

THE STENCH

"Stench; a fetid, or highly disagreeable odor."—Webster.

That's it; a highly disagreeable odor; the odor of California oil, in the nose of the would-be investor. He's sick of it all. He has heard so much of the "faker" that he cannot see beyond the end of his nose, which is full of the stench of said fakers. He cannot smell the pure air beyond; nothing but a "stink" for him; because for two solid years nothing but that sort of thing has permeated the atmosphere emanating from the minds of those who desire to drive capital from the oil business. Anyone would think that the "stench" was indiginous to California; we deny it. The "fakers" have made themselves unusually obnoxious, here, but not more so in the oil business than in any other business; and we maintain that the California oil business is as clean as any other in spite of all the faking talk of the last year. For ourselves, we are sick of hearing of fakers. If they really are in business, why dosen't the State Mineralogist drive them out, as he has done to others? Either because he has "lost his appetite for big game" or because the evidence is insufficient. We do not believe that the former is the case; and if the latter is so, why, the "stench" should not be spread broadcast. The person or persons against whom it is directed may not be in the class mentioned, and may come back in a manner that would suggest a bombshell. On the other hand, splendid enterprises may easily be ruined because of idle rumors. We, therefore, conclude that unless a case of wrong doing really beyond disproof is shown, it is better not to attack a corporation. One conviction under such circumstances, is worth, in public safety in investments, ten times all the "stenches" that could be made. A conviction and sentence to a prison term is a warning that will be heeded; it is also proof to the investor that his interests are being guarded by State and Federal authorities. The stench is not necessary.

Forest Fires Unnecessary

The terrible fires raging in the forests of Michigan and Ontario during the last few weeks have furnished an object lesson which should not be passed by unnoticed or unlearned. The lesson is, in the shortest possible space: Use California oil; or at least, use fuel oil for firing locomotives through forested regions, even if it should be at a greater cost. The saving in lives should be of greater importance than the saving of dollars; but, if the forests are the property of the railroad, the saving will be two fold; neither lives nor forests, which represent millions of dollars, will be lost. The Pacific Coast has learned the lesson, way up into Canada; it remains for proper transportation facilities to be obtained, in all probability, before oil can be used as fuel in Michigan; but, at $1.00 to $1.50 per barrel it should be possible to furnish Mexican and Gulf oil to the Eastern roads, and possibly, in time, even to Michigan.

Why Oil Is Being Stored

There are a number of reasons why oil is being stored. Some of them follow: 1. To guarantee a supply to consumers. 2. The so-called "over-production." 3. To keep from closing

down leases, which in many cases would mean forfeiture of same. 4. The price may not be as large as desired. 5. The great future demand. 6. Necessity of drilling along lease lines to protect the owners. "Future demand" necessarily takes in the supply that will be used in increasing quantities in the navies of the world, and especially of this Coast, and, of the great amount that will be necessary to supply the world's merchant marine. Two reasons for storage still remain to be mentioned. Oil is comparatively cheap at present; and, oil above ground is certain—the holder can contract to deliver it. The same cannot be said of oil in the ground with positive certainty of delivery, excepting in certain districts. Hence the great amount of oil in storage; an amount that would not supply the present demand for more than eight months.

The Gronna Leasing Bill

In the last issue of the **California Derrick** we promised to give further particulars concerning the above bill, which is now before the United States Senate. In the meantime, the excitement concerning the measure seems to have subsided to a great extent; and as the authority to whom we had entrusted the work of preparing a thorough and able discussion of the features of the measure, has not yet finished his work, we are compelled to delay presenting it before our readers for the present. Another matter which we have been compelled to delay is the publication of an article by Mr. Paul W. Prutzman, on the dehydration of crude oil by a new electrical process. This article we have not yet received, although we are assured that it will be prepared shortly. We request those waiting for the article to be patient, we are anxious for it as they.

"Inspired Articles"

The "Coalinga Record," in an issue several weeks ago, commented on the number of inspired articles appearing in the press, directed against the Independent Agency. It is true; and we are glad to have another publication mention it; for it shows that our comment in the matter is not through having an axe to grind. There have been "inspired articles" innumerable in many papers recently; and the effect can be seen in the low prices of stocks of Agency companies; and that is probably the only effect on the "men behind the guns."

Success of Californians

In a recent issue we chronicled the success of Mr. Thos. Hayes, the famous cementing expert. We have now to comment on the success of Mr. Ray F. Holser, one of the drillers who went to India with the other California boys at the time Mr. Hayes secured some 14 of "our best" to work for the Burmah Company. Mr. Holser is doing well and is meeting with success. For further information see Mr. Salisbury's Coalinga letter. We like to think that California men "make good" wherever they go.

Independent Agency Developments

By all odds the most interesting topic in petroleum circles in this state and elsewhere where there are people interested in the Independence Movement, is the condition of the Independent Oil Producers Agency, which has been considered critical for some time, but is now believed on the mend. On the twelfth inst. the Agency held a meeting to give consideration to the withdrawal of certain of the members who have signified their desire so to do, in accordance with the wishes of the letter sent out by the Executive Committee of the combination, wherein it was stated that the committee had received letters from several members desiring to break away from the Agency, due to the fact that owing to the "changed condition of the Industry the Agency appears to be unable to readily dispose of their entire product". The letter stipulated that it was a fact that the Agency was unable to sell all the oil, due to the enormous increase in production, and, stating that the power to release dissatisfied members was not vested in the Executive Committee, but in the board of directors, the request was made that a form of memorandum contract, which was enclosed, be executed by such members as desired to withdraw, and that said form of contract would be presented to the directors for their consideration on the 12th of July, at the quarterly meeting. Nothing was guaranteed in the matter, the letter stipulating that "You will understand that we are not in a position to guarantee any action of this kind, but we believe that if the matter is presented in the proper light, and if good reasons can be shown for the cancellation of existing agreements no difficulty will be encountered in making same effective." The letter, signed by L. P. St. Clair, President of the Agency, concluded: "The executive committee having unbounded faith in the future of our organization, and believing that the sacrifices made during the past year will be amply compensated for during the next succeeding years, and further believing that the accomplishment of its efforts to maintain a stable and satisfactory market with increased returns for the future will justify the continued existence of our organization, desires that the benefits to be obtained shall be shared by all who have participated in the burdens entailed up to the present time. Therefore, I would suggest that you give this question your earliest consideration and that your conclusions be reached only after a very careful analysis of the present situation and prospects for the future. Believing that if you do so you will conclude to continue with the organization that has striven to uplift the California oil producer and to foster and protect his interests.

Yours very truly,
L. P. St. Clair
President

Signed.

On the 12th, the meeting was held, and to the intense surprise of those interested, there were not members enough present to make a quorum, so that positively nothing was accomplished outside of discussing the problems confronting the producers. However, a proposition to make 75 members constitute the Board of Directors, instead of the present number of 150 (or one to each company in the combination), which is a very unwieldly directorate, was submitted to those present, who numbered only 52. To constitute a quorum there should have been 76 members of the Board present. If the new proposal carries, 38 members of the Board will constitute a quorum and business matters can be carried on more effectively than at present, when, as can be seen, the size of the Board hampers its movements very greatly. Two-thirds of the stockholders of the Agency must sign the papers in favor of this change before it can be carried out. Another meeting, to be held two weeks later, was then decided upon. This is necessary for the real work that must be done. At this meeting there were submitted detailed plans for the Oil Producers' Storage Company, which is to be capitalized at $5,000,000, and upon which a $4,000,000 bond issue will be floated, this to be secured by first mortgage. At the recent meeting this plan met with favor and passed up to the Executive Committee for ratification. The meeting to take place before the end of the month, or on the 26th inst., will discuss the proposed change in the directorate, the release of such members as desire to withdraw, who number 14 companies only and other important matters. As a side matter it might be added that of this number the "Oil World" states that none complained against the prices granted to the Doheney companies for their oil. The next meeting is anxiously awaited, as it is believed that it will develop a considerably better method of government for the Agency.

Ten millions of barrels of oil will be shipped from Mexico into the United States in the next 12 months by the Huasteca Petroleum Company. It will be somewhat hard on the Texas and Gulf products, won't it?

Good Roads in the Making

Continued

D. Basil W. Alexander, Pac. Coast Chemist for the Barber Asphalt Paving Company.

Ingredients

Asphalt.—It may be stated as a general thing that the oil that makes the best asphalt is probably the one containing the least amount of sulphur, for the possible reason that the sulphur compounds are more easily dissociated into sulphuretted hydrogen and a lower hydro-carbon remaining in the residue in a newly formed, and, perhaps, not stable condition. About one-third of the total amount of sulphur, however, remains in the asphalt probably in a combined condition.

Water is almost always found in crude oil, and always if the gravity is low. The lower gravity the greater the capacity for water, and the harder it is to remove it. To accomplish this as far as possible before pumping into the still a method is used depending on increasing the gravity of the water by decreasing the density of the oil and allowing the former to settle. This is done by heating: the method in general use is to equip two tanks with steam coils, raised from one to three feet above the bottom. The capacity of these tanks is sufficiently large to allow of at least one day's run ahead, in order to give the steam time to heat up, and the water to settle out. Another method, used more particularly in the oil fields, is to pass the oil as a fine spray into the bottom of a tall and narrow tank, preferably with a conical bottom, filled rather more than half full with water, heated up to 165 to 190 degrees F., by means of a steam coil under the oil spray. (See sketch). Passing through the hot water reduces the water in the oil to less than 1 per cent., and will dry 800 bbls. in 12 hours at a cost of about five cents a barrel. The dried oil flows from an outlet near the top into the storage tank.

This dried oil, still containing about 1 per cent., is pumped into the still and heat applied while the still is closed except for one small (2 in.) outlet, called the "tail pipe." This creates a pressure in the still, whereby the foam (produced by steam encased in oil) is held down, and prevented from rising and "puking" from the still. The bubbles burst and the steam escapes from the tail pipe until nearly all the water is "cooked off": this is indicated by the "rattling" of the still. The tail pipe is now closed, after opening the valve of the vapor line, when the distillates take their regular course through the condenser into the tail house where they are "cut" into their respective tanks when they reach the proper gravity.

When the temperature reaches about 250 degrees F., dry steam is turned in through perforated pipes in order to lift the distillates out of the still, and the temperature is gradually raised as the lower boiling distillates are removed. These, of course, have a correspondingly gradual lower gravity until it reaches 18 to 16 degrees B. At this point when a sample of asphalt taken from the still is found by the still-man to be of the required consistency (generally by chewing it) the fires are shut off, steam is turned into the cooler, and the draw-off cock of the still is slowly opened; the asphalt, between 600 and 700 degrees F., is thus transferred to the cooler, where it remains until cool enough to be drawn off into barrels for shipment. A sample from the still, as well as from the cooler just before drawing, is sent over to the laboratory for examination, and the results reported back to the still-man as soon as possible.

What the penetration, or consistency, of the asphalt is to be, is decided by the use to which it is to be put, or the location of the city in which it is to form part of a pavement. In a cold climate it is necessary to make the penetration higher to allow for contraction without cracking during the winter months; while at the same time it shall not be so soft as to render the pavement easily moveable during the summer months. Again a street of light traffic can have a somewhat softer asphalt than one of continuous heavy traffic, because the jar of the traffic will relieve, little by little, the strain set up by contraction during a fall in temperature; without such jar the strain will increase until the breaking point is reached, causing cracks. The more traffic an asphalt pavement has, the better it is for it. This has been observed by the writer on a street in Los Angeles where a corner out of the regular line of traffic cracked, while the main street, though laid at the same time, with an identical mixture, is still good after seven years' service.

It was formerly the practice to reduce the asphalt to a hard penetration, fluxing it back, as required, to any desired consistency; this, however, was found to make an inferior material, because the asphalt suffered deterioration too much to recover with the addition of flux; so the material is now turned out with the required penetration direct from the still. This entails increased carefulness in distillation, and increased cost of the product; but the result has justified the expense. The deterioration, referred to above, was caused by the "cracking" of the oil in the still, so great care is now taken to prevent this, as carbenes are thereby formed, producing a condition of the asphalt that in the past has been responsible for many pavement failures, before that fact became recognized.

Methods for analyses of asphalt were briefly outlined in the last article by the writer in this magazine, and, therefore, will not be taken up again here.

Dust.—The presence of a certain amount of very fine dust is one of the most essential ingredients of a perfect asphalt pavement. It was formerly considered necessary that the dust should be composed of carbonate of lime, for the reason that the natural bituminous rocks of Europe, first used for pavements, consisted of this material impregnated with bitumen; it is still being used at the present time because it is sharp, crystalline, and hard, and asphalt adheres firmly to it, being partly absorbed by it. However, it is not necessarily the best material, as Portland cement gives better service where conditions of very heavy traffic have to be met. Ground silica may be used, but care must be taken not to lose the lightest parts during the process of mixing, owing to its being very flocculent. The requirements are that at least 75 per cent. should pass through a sieve having 40,000 meshes to the square inch, and known as a 200-mesh sieve. Of course, any dust mill that will accomplish this result may be used, the best being, naturally, the one that will give the highest percentage of 200-mesh material. The requirements, however, are carried further still, and a certain amount must be still finer, in fact, an impalpable powder. As sieves cannot be made fine enough the final differentiation is made by an elutriation test, determining the amount that will not settle in 15 seconds, after thoroughly stirring, in distilled water at 65 degrees F. Beyond the cooling effect on the hot sand, to which it is added, there is no technical reason why a coarse dust should not be used as long as enough is added to give the requisite amount of the 200-mesh material. The objection is of a financial nature, since anything rejected by the 200-mesh sieve is merely acting as sand, but is being paid for at the price and freight rates of dust. It should also be noted that the finer the dust the more it will contain of the true dust, and the less, therefore, will be used, making a double saving of dust and fuel.

Sand.—This ingredient forms about 75 per cent. of the mass of the pavement, and the selection is necessarily important; more so than is imagined by the man in the street. It would be a simple matter if the first sand could be used that came to hand, as is the case with bituminous rock. The sand that is required is one that shall approximate a grading that has been determined by the examination of successful pavements. This

is divided into eight grades, or sizes, that are multiples of the finest, and are determined by sieves of 100, 80, 50, 40, 30, 20 and 10-meshes to the lineal inch. The percentage amount passing these will vary according to the traffic the pavement will be called upon to sustain. They will approximate the following:

Mesh.	Traffic, Heavy.	Light.
200	....	....
100	17	11
80	17	11
50	30	33
40	13	15
30	10	13
20	8	10
10	15	7
	100	100

The presence of 200-mesh sand is not desirable as it does not have the wedging effect that the particles of dust have.

It is not always that a single sand can be found that will come up to this grading; in that case the result is obtained by combining two or even more. A sieving is made of the separate sands in the laboratory, and they are then combined in the proportions that will, as nearly as possible, give the standard sieving required. In any case the deliveries must be closely watched at the paving yard to see that they do not differ too greatly from the standard. Although the supply of beach sand is inexhaustible it is not used because constant attrition by the sea waves has rounded the grains off, making them more or less spherical. This is a form in which they cannot become solid, but are liable to become displaced under the disturbing influence of passing traffic. This objection is not so applicable in the case of light traffic, as some very satisfactory pavements have been made of beach asand under those conditions.

The requirements of a sand are that it shall be hard and angular, with the points and edges sharp; a sand deposited by a river and derived from siliceous rocks, generally gives a good sand as far as grain character is concerned, and is, therefore, most satisfactory; but the grading will depend upon whether it has been deposited in swiftly running, or comparatively still water. The stiller the water the finer the sand.

The most important sizes are those passing the 100 and 80-mesh sieves; these lessen the sizes of the voids so that the dust particles do not occur in comparatively large masses, but serve to wedge the smaller grains among the larger.

The next important sizes are the 30, 20 and 10. These are the foundation sizes that carry the traffic; it is, therefore, essential that they should not consist of soft material.

Rock.—Concerning the rock there is not much to be said, as it can easily be obtained in bulk, crushed, and screened to any required size; and is then in as good shape as it can be obtained. Of course, the rock must be hard, and not easily crushed, or it will break under traffic.

Rock is used in the base as a Portland cement concrete foundation, made in the usual manner, and laid usually 5 in. to 8 in. thick according to the condition of the sub-grade. Also it is used as 1 in. material in the binder course between the base and surface, mixed with about 5 per cent. of asphalt. However, this open binder course is being rapidly superseded by the close binder, that calls for the addition of sand; this naturally increases the cost, but the increased satisfaction given by the pavement is generally considered worth it. A form of this close binder, known as asphalt concrete, is coming largely into use as a wearing surface, and is giving great satisfaction, even in cities where it is subjected to fairly heavy traffic.

The second part of this article, treating of paving plants and street work, will appear in a future issue.

Oil Well Drilling Revolutionized

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The News from This Field is Written By
GUY H. SALISBURY—California's Best Known Oil Correspondent

The Canadian interests in this field are actively going ahead with their development work. The Vancouver-Coalinga Oil Company, Limited, Section 14, 20-15, have their Well No. 1 2310 feet deep with 12½-inch casing; this is the longest string of 12-½inch casing in this field, and possibly thelongest in the oil fields of California. This will enable the contractors, Walp & Cypher, to carry the hole to 4000 feet depth, as per contract, with the 6¼-inch string. The pipe has been landed and the 10-inch casing is being hauled out. The circulator is responsible for the pipe going through the loose sand in this formation. A few loads of clay, or adobe, thrown in the hole will mix up, and will plaster the sides of the wall of the hole, thus holding the sand in check, allowing the water to circulate freely the entire length of the casing. It is then only a matter of weight of the casing as to how far a string can be carried.

British-California Oil Co., Ltd.

The British-California Oil Company, Limited, Section 16, 20-15, Well No. 1 is 3352 feet deep, 6¼-inch casing. The circulator system is now used on this hole and working very satisfactorily. The pay-sand will be about 3800 feet; the present formation is blue shale.

Canadian-Coalinga's Progress

The well of the Canadian-Coalinga Oil Company, Limited, Section 8, 21-15, is 2440 feet deep with 10-inch casing; the circulator system is used on this hole. The present formation is alternating brown shale and a sticky blue shale, hard to mix.

Mr. Holser Makes Good

Ray F. Holser, who left last April for Burmah, under contract with Thomas Hayes for the Burmah Oil Company, Limited, is now in charge of the Khodoung field, Upper Burmah. Mr. Holser is running 32 strings of tools on new and old work, there are to be eight more strings added as soon as the property is cleaned up. There are 350 producing wells now on the beam and Well No. 367 is drilling. Bert. Montgomery is Holser's assistant, having charge of a division. All of the men who went with Holser are well, and are reported as very enthusiastic over the prospect of making good in the new field. W. E. Sullivan, driller, spent a little time sight-seeing in Shanghi and contracted a slight attack of smallpox. He was taken to a hospital in Rangoon, was discharged on May 26th. He states that the company "used him like a Prince of Royal Blood, instead of a driller." J. H. Richardson, rotary man, and his wife, arrived at Rangoon about May 24th and are now in the Khodoung field, after a delightful trip of 44 days from San Francisco, and are delighted with the place and scenery generally. The men are busy getting the property in shape for the introduction of the California equipment and method of handling an oil well.

Associated's Great Reservoirs. Under Construction

The large earth-reinforced concrete reservoirs that are being built on Section 9, 20-15, by the Mahoney Brothers of San Francisco, for the Associated Pipe Lines Company, are fast assuming shape. At present writing there are engaged on this work 30 four-horse teams on Fresno scrapers, and four two horse teams are plowing, loosening up the earth for the scrapers. There are over 100 men on this work from the superintendent to the helpers. The inside base of each reservoir is 462 feet in diameter on the bottom; the slope of the sides is one and one-half to one, with 22 feet height, making the diameter at the top 528 feet. The dirt excavated is hauled out to build the walls and a water line as the earth being loosened up by the plows, receives a good wetting, packing the loose earth in the walls. There will be two of these reservoirs on this section, with a capacity of 750,000 barrels each. The reservoirs will be covered to protect the oil from the sun and dust of summer and the rains of winter. This large storage supply of oil will be a guarantee to the Southern Pacific for its fuel oil over periods in the future where shut downs may interfere with production.

St. Paul Consolidated Oil Co.

The St. Paul Consolidated Oil Company are operating a Southern Pacific lease on section 23, 20-14, the same being the south half of the north half of the section. The original lease was made to Jas. A. Ward, dated December 10, 1900; later a sub-lease was made to the St. Paul-Fresno Oil Company. There are 18 wells completed on this property; two of them have been abandoned, being wells No. 1 and No. 2. The water trouble on this property has been overcome. The experiments made in the study of formation and method of cementing off the water in the west side formation has been very successfully carried out on this property by R. Baker, the Oil Well Commissioner, a pioneer oil man of the west side. The wells along the north line of the property are 100 barrel wells, with no trouble in handling, are all free from water, silt and sand. The territory is from 510 to 790 feet to pay sand.

Pluto has Fine Indocations of Oil

The Pluto Oil Company, section 19, 25-19, Devils Den District: Well No. 1 is reported to be over 2,740 feet deep, 6¼-inch casing. The formation is hard brown shale carrying marine shells. A strata of shale was cut through that was rich in oil; this was what caused the report that the Pluto had struck a big well. The shale oil was encountered above the hard, brown shale that the bit is now in. The manager is looking for an oil-sand under this present formation. Those interested in the Pluto, and other parties who have lands near by, are very much elated over the present indications and believe an oil-sand will be entered at any moment; so far the oil has laid in the shale formation.

Shipments of Producers, Transportation and Associated Oil Companies

The Producers Transportation Company are moving 10,000

to 12,000 barrels per day out of the field, will average 350,000 barrels per month. The hot weather makes the moving of the oil over the mountains a much easier matter, as the oil moves very freely along the line. The Associated Oil Company are moving an average of 120,000 barrels per month of Agency oil out of this field. This gives us about 470,000 barrels for July, which will soon enable the small companies to resume operating, as the storage of the field is that much relieved.

New Bedford Consolidated Oil Company

The New Bedford Consolidated Oil Company, on Section 6, 17-12, about 26 miles southwest of Mendota, in San Benito County. The water was cemented off in Well No. 1 at about 1800 feet with 7⅝-inch casing. The company had a showing of oil, lost a string of tools in the hole, have drilled by this string in good shape and the pipe is reported in good condition.

Lost Hills Activity

The Crocker-Cammeron interests in the Lost Hills are showing much activity. Iron is being hauled out for a 15,000 barrel storage tank. The report states that the drilling is going on satisfactorily. A water-line has been laid from the slough to the property for boiler use. The camp presents a lively appearance.

Claremont Oil Company

The Claremont Oil Company, Section 24, 20-14, have two wells making some trouble, No. 12 and No. 14, the water conditions are now being looked after. There are 14 producing wells, four of which have a little water trouble, will now be cleaned out. The property is making about 11,000 barrels per month.

Dividends

From the quarterly dividend statement of San Francisco Stock Exchange, issued July 10th.

Company.	No.	Date.	Dividends. Amt. pr. shr.	Total to date.
Alma Oil Co.	18	3 14 11	$ 03	$ 205,200
Amal. Oil Co.	32	9 15 10	1 00	1,600,000
Am. Pet. pfd.	21	3 1 11	66	2,422,573
Am. Pet. com.	21	3 1 11	66	2,422,573
Apollo	2	3 20 05	01	4,000
Ass'd Oil	4	3 1 07	1 50	1,548,368
Bay City	8	10 15 10	10	155,000
Brookshire	45	1 1 10	01	442,500
Caribou	71	3 15 11	02½	942,640
Claremont	73	6 28 11	02	475,000
Coalinga Pac.	18	12 23 09	10	107,250
Columbus	66	6 25 11	½	504,693
Columbia	67	6 25 11	½	504,693
Del Rey	8	5 1 11	½	31,420
Empire	8	12 31 10	01	16,000
Esperanza	26	12 27 09	02	49,450
Euclid	43	2 1 11	½	143,250
Four Oil	68	2 25 10	01	213,000
Globe	22	10 1 10	01	93,000
Gypsy	4	8 4 10	07	40,000
Home	A29	3 20 11	02	498,000
Homestake	51	5 18 11	10	83,250
Illinois Crude	40	6 1 10	01	94,000
Imperial	71	7 18 10	8 00	4,000,000
Junction	8	6 1 00	01	20,000
Kern River	50	1 1 11	10	120,000
Linda Vista	25	6 9 77	01	92,124
Lucile	16	12 20 09	10	42,727
Mascot	17	6 20 11	02	190,000
Mecca	6	7 15 09	03	71,825
Monte Cristo	74	6 24 11	05	900,000
Mountain Girl	1	8 4 10	02	7,000
Mexican Pet.	56	4 1 11	01½	113,350
Nevada County	3	10 13 08	04	,000
New Penn Pet.	13	6 15 11	00½	47,500
Palmer	25	6 25 11	01	521,275
Paraffine	20	6 15 11	02	69,0
Peerless	77	9 20 09	06	801,000
Piedmont	7	5 9 10	01	26,877
Pinal	62	10 30 10	10	991,835
Premier	4	7 20 10	01	40,000
Producers'	4	5 17 11	60	216,000
Record	23	5 15 11	15	182,500
Rice Ranch	23	12 31 10	03	126,000
S. F. & McK.	31	11 1 10	30	465,000
Sauer Dough	65	6 21 11	02½	499,098
Section 25	16	6 25 11	25	160,000
Sesnon	16	3 7 11	07	171,000
Shawmut	4	4 11	03	35,000
Silver Tip	9	6 26 11	02	37,500
Sovereign	21	7 1 11	01	110,000
S. W. & B.	7	9 10 09	01	41,470
Sterling	23	3 15 11	12½	776,250
Superior	15	12 17 10	01	67,500
Thirty-three	60	8 6 10	4 00	1,090,000
Traders'	17	5 15 10	1 00	209,146
United Pet.	118	6 20 11		2,849,193
Union	179	6 20 11		8,810,565
United Oil	11	6 10 11	03	162,755
West Coast pfd.	6	9 1 10	2 00	124,896
West Shore	47	12 21 08	05	235,000
W. K. Oil	1	6 20 11	03	15,000
Western Union		2 25 11	50	487,451
Yellowstone	1	5 08	01	8,000

Eighteen millions of dollars is said to be the consideration for which the Texas Company has taken over the Pearson interests in Mexico; the truth of the report is much questioned, as it is not even definitely known that the Pearson interests have been disposed of, let alone the price consideration.

The British Consolidated Oil Corporation, Ltd., and the Coalinga-British Oil Company, Ltd., have agreed to amalgamate.

The Union Oil Company is building a small refinery at Brea Canyon for treating the Menges oil.

A company headed by Dr. Earnest Crutcher, of Los Angeles, is about to wild-cat on the "Olimpic Peninsula," west of Puget Sound, Washington, where traces of paraffin oil have been found.

The Southern Pacific is now operating 26 new oil burning locomotives, delivered recently. This is a part consignment of the order for 196 new locomotives given by the Harriman lines a year ago.

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SUNSET-MIDWAY-McKITTRICK

Production for Month—Loss Noticed

During the month of June, Sunset produced 415,410 barrels of oil. Midway produced 1,768,973 barrels and McKittrick 399,620 barrels, a total production for the West Side fields of 2,584,003 barrels for the month. This represents a loss of 45,996 barrels from the production during May, when the total output of these fields reached 2,629,999 barrels. While the outlook with this reduction in view, for moving the oil, might seem brighter, the July production, it is feared, will prove greater than either of these given, as several new gushers have been spouting this past month. This is notably true of

The Lakeview Oil Company's New Gusher

The early part of the month the Lakeview Oil Company brought in a gusher which flowed at the rate of 800 barrels an hour, or even a little in excess of that rate, the estimated output being at 20,000 barrels per day. The huge production did not last long, however, for the well bridged over inside of three hours, much to the satisfaction of the company, inasmuch as they were unprepared to care for such a large output. The new well is located approximately a mile and a half east of the famous Lakeview No. 1, at a depth slightly in excess of 2600 feet, with 4¼-inch casing. Its location is on Section 25, 12-24. It is thought that while it will not be nearly as large as No. 1, it will nevertheless be a very large producer when again opened up.

Honolulu's Gas Plant About to Operate

As we go to press we learn that the Honolulu's gasoline-from-natural gas plant is about completed, with the final work on the installation of the eight Bessemer gas compressors in the last stages. By the time the **Derrick** reaches our Eastern readers the famous gassers which have become known around the world will be contributing to the gasoline output of the State of California and to the monetary receipts of the Honolulu Oil Company, if all goes well. The plant is located on the holdings of the company in the Buena Vista hills. In brief, the process through which gasoline is extracted from the natural gas is as follows: The gas is subjected from a low to a high pressure, is expanded in coils, passed through a cooling apparatus and separated. The eight compressors have a capacity of 4,000,000 feet of gas in 24 hours, at which rate, estimating two gallons per 1000 feet, the company should be able to produce 8000 gallons daily, if run to full capacity; a nice money-making proposition if the gas holds out.

Esperanza Has New Well

Esperanza's Well No. 1, on Section 32, 32-24, Midway, lying between the Standard's big Section 30 wells and the Lakeview and surrounding wells, recently entered the sand at 2500 feet. The well was shut off before any showing was made.

Guaranty's Annual Meeting Held

At the annual meeting of the Guaranty Oil Company, held at the company's offices in the Citizens National Bank Building, Los Angeles, on the 28th of June, just after the last appearance of this magazine, over 90 per cent. of the stock was represented and the following officers were elected for the present year: R. L. Cox, President and General Manager; Chas. F. O'Brien, Vice-President; H. W. Hellyar, Secretary and Treasurer; G. W. E. Griffith, C. H. Burdick, Thos. O. Turner and Chas. V. Brooks, diretors. The report of the auditing committee was read and approved; it consisted of an approval of the books and business of the company. The stockholders were very pleased with the way the company was managed during the year past, and expressed satisfaction in the future outlook.

Twenty-five men are now on the Guaranty right of way setting stakes for the new pipe-line, under the direction of Messrs. Parsons & Barton, the company's engineers. The route will pass over the Coast Range through the Cuyama Valley as detailed in a recent issue of this magazine.

Elk Horn Contracts with Standard—Will Pay Dividend October 1

The Elk Horn Oil Company, with property close to the Mascot and other "25" Hill Companies, has contracted to sell 75,000 barrels of oil to the Standard Oil Company, at a price not known to us, but said to be very fair. We have further information to the effect that a dividend is to be paid by the company on October 1st; amount and percentage not mentioned.

Maricopa Votes to Incorporate

Maricopa, which was recently severely swept by the flames, has voted to become a full fledged city. The burned district is not yet re-built.

Visalia Midway Suspends

The Visalia Midway Oil Company, which owns its property, and also owns three good wells, has suspended for the time being, doing little but marketing their production. It is stated that the company could easily pay dividends at the present time, but that the policy of the directors is to provide a fund for further development of the property before regular dividends are commenced. The Visalia, it is announced, will drill three more wells before committing themselves to regular dividend payments.

New Oil Town

A new oil town, called Pentland, has been plotted on Section 4, east of the town of Maricopa. It is a noticeable fact that the only rights reserved to the owners of the town are the mineral rights. The location of a townsite here is a wise move as the territory is comparatively deep and will be a great oil center for many years to come. It is stated that the place has been plotted in a manner to eliminate in a large degree the danger of fire.

Crisp News Notes from the West Side

The Associated Oil Company's well on Section 30, Elk Hills, is past 3700 feet in depth and going deeper. The company has a light oil producer in this well good for several hundreds of barrels per day, but is bent on exploring the territory below.

The Midway Northern Oil Company, operating on Section 32, 12-23, near Maricopa, has a new well, estimated at from 3000 to 5000 barrels per day. The gusher sand was struck at 2150 feet or thereabouts, bringing in the Northern's second good producer.

The Esperanza's well on Section 10 is down 2700 feet with good showings.

The August Oil Company, on Section 31, 12-23, have every prospect for a big producer. They have just experienced a heavy gas blow-out.

Both Pacific Midway and K. T. & O., on Sections 32 and 31, North Sunset, have brought in flowing wells, reconed at from 1000 to 2000 barrels daily.

The California Amalgamated Oil Company ,Ltd., has filed articles of incorporation in Kern County; the company takes over producing properties in Midway.

The Midway Valley, Section 12, Elk Hills, is down 3625 feet with six-inch casing; open hole.

The Lakeview Gusher is not yet dead; no, no! Only 3 per cent. water in its production, and that production a good one. An aftermath of the Lakeview is the suit of Messrs. Dunn, Barrett and Fried, against the Union Oil Company to secure the one-sixth royalty due them on 8,300,000 barrels alledged production by the mammoth well. Plaintiffs desire a receiver appointed and the date for a hearing has been set for July 24th, which makes it impossible to give the outcome in this number of this magazine.

The work of cementing off the California King well of the Guaranty Oil Company has been successfully accomplished. A well in the near neighborhood—200 feet distant—produces oil of 28 degrees gravity, a most desirable oil. Wharfage and pipe-line rights of way for the company at Ventura are being obtained in a most satisfactory manner.

The Fairfield and Olig Crude properties, in McKittrick, are now inoperative, but will soon, according to report, start going again.

The Belridge Oil Company has erected five new rigs and brought in three new wells on Section 34, all reported good. Gravity of one of wells of said company is stated to be 26.4, Beaume.

"The Oil World" declares that the Standard Oil Company has purchased all of Sections 3 and 4, 27-21, Lost Hills. We have no definite information in regard to the matter.

The Standard's deep well on Section 10, 32 23, Midway, which passed through light oil in its earlier stages, reached a heavy, asphaltic oil, of 16 degrees gravity at 3200 feet depth. This oil is said to underlie the whole field thereabouts, and to fully prove a theory advanced by Prof. Merriam, of the University of California, in regard to the deposition of oil strata, the idea being that the lighter oil is underlain by an asphaltic product and it is due to that fact that the lighter oil exists.

The Bear Creek Oil and Mining Company is offering 40 acres for sale at $2500 per acre. The land lies in 14, 31-22. No English syndicates yet heard from.

Well No. 4 of the Maricopa 36 Oil Company, which is now below the 2100-foot level, is to be continued to the Lakeview level in order, if possible, to tap the Lakeview sands.

It is stated that the Associated will build a pipe-line into the Belle Ridge and Lost Hills Districts.

The Pyramid Oil Company is looking for a big well in No. 1, on Section 18, 32-25, Midway; the well is now down about 3125 feet, in shell, and in a formation said to be similar to that encountered by the Honolulu people in their well on a neighboring property, which has produced as high as 3500 barrels of light gravity oil per day. The Pyramid has 1600 acres.

The Adeline Road Oil Company's new topping plant is almost completed and it is expected will soon be in operation.

The following wells of the United Oil Company have reached stated depths: No. 17, on Section 24, 31-22, 2700 feet; No. 4, same section, 2100 feet; No. 21, Section 20, 31-23, close to 2800 feet, with heavy gas pressure.

W. D. MALTMAN

THE CALIFORNIA DERRICK'S EXCLUSIVE SANTA MARIA CORRESPONDENT

NOTE—Mr. Maltman is very well posted on all Santa Maria and especially Cat Canyon oil conditions, being an operator there.

Palmer Annex Oil Company

The Palmer Annex Oil Company, recently incorporated under the name of the Santa Maria Oil Fields, Ltd., of London, is carrying on the most extensive development campaign in the Santa Maria field. It has seven wells drilling, four of which have just been started and one into oil-sand at the depth of 2800 feet. This well resembled the big Palmer wells and will be finished at approximately the same depth. In addition to the construction of a model camp the company is preparing to erect a refinery to take over the heaviest crude product from the Cat Canyon wells and convert it into asphalt and by-products. The plant will be completed about November 1st. To facilitate the marketing of its output from the refinery a broad-guage road from the Southern Pacific main line at Guadalupe is being laid out, and will be completed at practically the same time as the plant. This road will enter the Cat Canyon fields in the very heart and will be the means of eliminating the present long hauling necessary to get materials to operators, in every way proving a great benefit. The road will be financed by the English syndicate who purchased a controlling interest in the Annex.

Ideal Oil Company

Ideal Oil Company, on the Tunnell property, has landed the eight-inch casing at 2800 feet preparatory to completing it swell with six-inch. The hole is in perfect condition and the upper water shut off so that the crew is in readiness to continue the well. The formation is very promising. The well anticipated for the Waite tract will not be started until the Tunnell well has been completed.

Summit Oil Company

The Summit Oil Company has removed most of the bad casing which obstructed drilling in its first well on the Witzen property on the northern edge of the Cat Canyon field. The well was not damaged by the accident and will continue drilling in blue shale from the depth of 2300 feet.

Santa Maria Midway

The Santa Maria Midway, in the Tepusquet, has reached a depth of 1500 feet with 10-inch casing—on the Ontiveros tract. This well shows every promise of getting a strike; has a quantity of gas and some color is evidenced in the formation. A strike here would open up the Tepusquet, as the Midway is a pioneer prospector.

Princess Oil Company

The Princess Oil Company, in the Tinequac, has encountered similar condition to that of the Dome strike on the Wickenden. The Princess well is within a mile of the late Dome strike and is drilling at 2500 feet in formation identical to the gassy oil-sand which has proven up the territory. This well will be the second in the new district and gives the Princess its first production. In the Tepusquet the Princess is down 1700 feet with No. 2 in a gassy shale which is very promising.

Carpenteria Oil Company

Carpenteria Oil Company is down 3150 feet in its first well adjoining the Brooks in Cat Canyon. The bailings show a quantity of oil and every indication is for a big well. The gas in the hole has unusual force and this, accompanied by the thick strata of sand encountered at a depth of about 2700 feet, assures a producer. The Carpenteria strike proves up an additional Cat Canyon territory to the south extending the proven belt about two miles.

Dome Oil Company

Dome Oil Company, on the Wickenden tract, in the Tinequac, reports a big strike of live sand at 2720 feet. While cleaning out the hole preparatory to drilling through this sand a production of 500 barrels daily has been brought up in the bailings. The oil is rather heavy but the management expects to encounter a lighter sand after drilling through the present sand. This well is about eight miles southeast of the Palmer property in Cat Canyon, and will open up the stretch of intervening territory to prospectors. The Dome has nearly 4000 acres adjacent to the Wickenden tract and the strike will give this property increased value.

Brooks Oil Company

Brooks Oil Company is working its No. 2 under the air-compressor with good results. The hole has not yet been freed of sand but is giving a substantial production of about 500 barrels daily. It is expected to gush when thoroughly cleaned out. No. 1 has been converted into a first-class water well having been cased off above 800 feet.

Palmer Oil Company

Palmer Oil Company, on the Blochman tract, is again ready to open up its big wells, having completed storage for 200,000 barrels of oil. The production had to be shut in owing to congested facilities and this has been partially relieved by large shipment via the Union and Associated lines. No. 1 is being cleaned out with a rotary to get the oil from below 2700 feet, where an old obstruction has held back the lower oil for a long time. No. 2 gushed at the rate of 2000 barrels daily, showing a strong inclination to get back to its old figure. No. 3 is pumping 300 barrels daily. No. 4 is being cleaned out with every promise of equalling the big wells. No. 5 is being prepared to test. This well has the premier sand of any of its neighbors and is expected to surpass them in production after being opened up. Palmer Stendel No. 7 is drilling; is close to 1000 feet in surface formation.

Palmer Union Oil Company

Palmer Union Oil Company, on the Rice tract, north of the Blochman property, is getting out of its difficulty with No. 1 in good shape, and expects to establish it as a producer within a short time. Nos. 2 and 3 are nearing the pay-sand. Both wells have passed the 2500-foot mark and are drilling in a formation showing gas and oil.

Santa Maria Petroleum & Pipe Line Co.

Santa Maria Petroleum and Pipe Line Company has cemented off the surface water with 12½-inch casing at the depth of 1120 feet, and is now running in 10-inch. This is the second well on its property and has made a record for rapid drilling. The well on the Alexander tract north of the Ideal is also going down satisfactorily and it is predicted that the management will have no trouble getting around the former water problem, which proved the source of delays.

West Oil Company

West Oil Company, in Cat Canyon, has re-drilled its well to a depth of 2840 feet, and is now into the thick bed of oil-sand formerly drilled through when the hole went 3400 feet. It will be finished up about 2900 feet and tested.

New Pennsylvania Petroleum Company

New Pennsylvania Petroleum Company is working on its Cat Canyon well in an effort to get it opened up. This hole has been a problem for over a year, but with its wonderful penetration of oil-sand and heavy gas pressure, is counted upon to ultimately rank with the biggest well in the field if not to surpass it. The sand shows a thickness unparalleled. The light oil production of the old field shows no diminution.

Pinal Oil Company

Pinal Oil Company is drilling its Cat Canyon well at a depth of 2300 feet. The casing leak seems to be water tight and no further trouble from this source is anticipated. The reported sale of the company's property to an English syndicate lacks confirmation, although negotiations are known to have existed. The property ranks as one of the best light oil producers in the Santa Maria field, having 900 acres in the high gravity belt, and has been sought by the outside investor for a long time.

Gato Ridge Oil Company

Gato Ridge Oil Company is making good headway with its Henderson well having drilled through the surface sands and being now in a shale formation. This well is close in to proven property, and is one of the best new prospects in the field.

Cat Canyon Oil Company

While there is little of importance to report about the operations of the Cat Canyon Oil Company, it is being proven more conclusively each day that the prospects for a high-grade oil at a shallow depth are more certain. The oil-sand in Palmer No. 5, which is on a direct line west of Palmer No. 8, is the richest yet discovered in the Cat Canyon field. This latter well is just a half mile due south of the Cat Canyon Company's No. 1 well.

In our last issue, through an error on the part of the typist who took the notes, it was stated that the Brookshire had a production of 18,000 barrels per day. It should have read "per month."

Patents Recently Granted

The following recently granted patents of interest to the oil trade, are reported expressly for **The California Derrick** by J. M. Nesbit, patent attorney, Park Building, Pittsburgh, Pa., from whom printed copies may be procured for 15 cents each:

Deep well pump, James Gleason, Green Bay, Wis., 994,310.

Drilling apparatus, H. W. Muhleisen, San Francisco, Cal., 994,866.

Thread protector, P. J. Shrum, Monaca, Pa., assignor to Colona Mfg. Co., Pittsburgh, 994,880.

Pumping jack, Andrew Peercy and E. M. Bretz, Kiefer, Okla., 995,032.

Self-adjusting rotary bit, C. E. Frederickson, Coalinga, Cal., 996,064.

Rod puller, G. L. Horn, Papillion, Neb., 995,143.

Deep well pump, P. J. Gildea, San Francisco, Cal., 995,248.

Packer for wells, A. C. Graham, Oilfields, Cal., 995,250.

Well casing placer, Joseph Commetti, near Graland, Ala., 995,662.

Overshot fishing tool, Wm. Kammerer, Los Angeles and E. J. Schneider, Hollywood, Cal., 995,875.

Well drilling apparatus, A. G. Collins, Everett, Wash., 996,002.

Multiple tool well drill, J. N. Lewis, Detroit, Mich., 996,595.

Pipe lifter, Charles Kern, Tell, Wil., 996,259.

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SAN FRANCISCO STOCK EXCHANGE QUOTATIONS

Oil is still quiescent in San Francisco, although somewhat livlier at present than earlier in the summer. However, quotations are low and sales small. Following, find the list and prices bid and asked for stocks on the San Francisco Stock Exchange:

Producers.	Bid.	Asked.
Associated Oil Stock	$49.00	$49.25
Caribou	.....	1.00
Claremont	1.10	.....
Coalinga Mohawk	.75	.90
Cons. Midway	.13	.14
De Luxe	1.10	.....
Four	.....	.18
Illinois Crude	.....	.10
Maricopa National	.20	.....
Maricopa 36	1.80	.....
Mascot	.....	1.75
Mecca	.....	1.75
McKittrick	.10	.....
Monte Cristo	2.00	.....
New Penn. Petroleum	.49	.....
Palmer	1.27½	1.30
Palmer Union	.48	.50
Peerless	4.00	4.75
Piedmont	.....	.05
Premier	.35	.40
Republic	.48	.50
S. W. & B.	.21	.....
Wolverine	.40	.....
W. K. Oil Co.	.....	3.00
Yellowstone	.....	.10

Los Angeles Quotations

Los Angeles displays more interest in oil stocks than San Francisco, as evidenced by the following quotations:

Producers.	Bid.	Asked.
Amalgamated Oil	$40.00	$48.00
American Crude Oil Co.	.....	.03
American Pet. Co. (com)	39.00	.....
Associated Oil	49.25	49.50
Bear Creek Oil & M. Co.	.....	.75
Brookshire Oil	1.05	1.20
California Midway Oil Co.	.40	.40¾
Central	1.92	1.96
Coalinga Central Oil Co.	.....	.....
Columbia	1.08	1.15
Consol. Midway Oil Co.	.11⅝	.11¾
Continental Oil	.....	.35
Enos Oil Co.	.50	.....
Euclid Oil Co.	.....	.55
Fullerton Oil	.....	5.00
Globe	.03	.09
Jade Oil Co.	.21	.28½
Mexican Pet., Ltd. "Pfd"	71.00	72.00
Mexican Pet., Ltd. "Com"	36.25	36.37½
Mascot Oil Co.	.....	1.75
New Pennsyl. Pet. Co.	.49	.....
Olinda Land Co. (Oil)	.49	.....
Palmer Oil Co.	1.27	.....
Penn. Midway Oil Co.	.11	.....
Pinal Oil Co.	.....	10.00
Rice Ranch Oil Co.	.35	.....
Section Six Oil Co.	.....	.10
Trader's Oil Co.	68.00	70.00
Union	101.25	101.50
Union Provident Co.	101.00	.....
United Oil Co.	.75	.78
Western Union	90.00	115.00
White Star Oil Co.	.25	.....
Non-Producers.		
Nevada-Midway Oil Co.	.14	.....
Oleum Development Co.	.04¾	.04⅞

The Central Oil Company has a new well in the Whittier field; good for at least 200 barrels per day.

Oil locations covering 5760 acres on the Mojave desert have been filed at San Bernardino by Bakersfield interests, who believe there is a big field underneath their claims.

A new gas-compressing factory has been started in Boulder, Colorado, to "refine" the gas into gasoline; it is stated that the gas is richly saturated and will yield from 3.5 to 5.5 gallons per thousand feet.

The Homephone Directory

The new directory will be out soon.

Goes to press July 10th.

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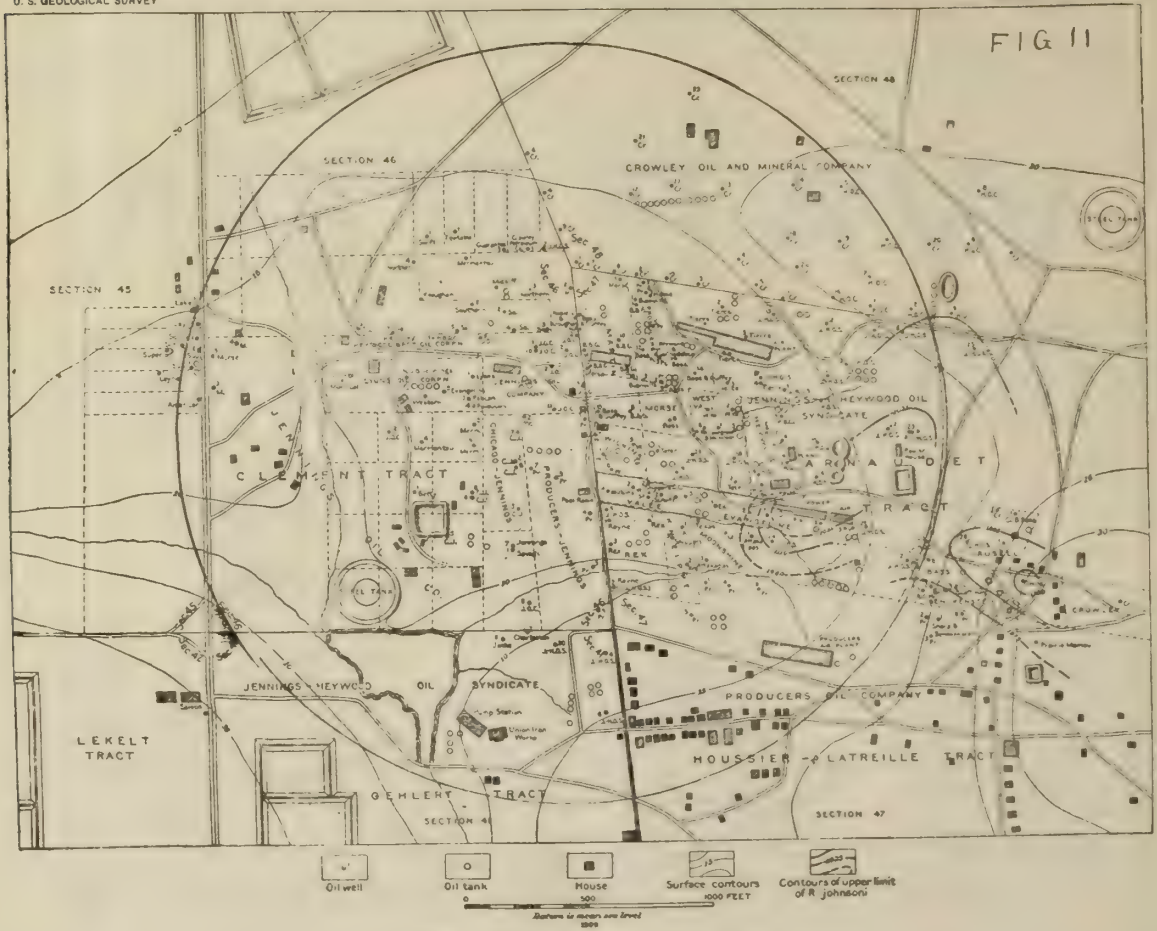
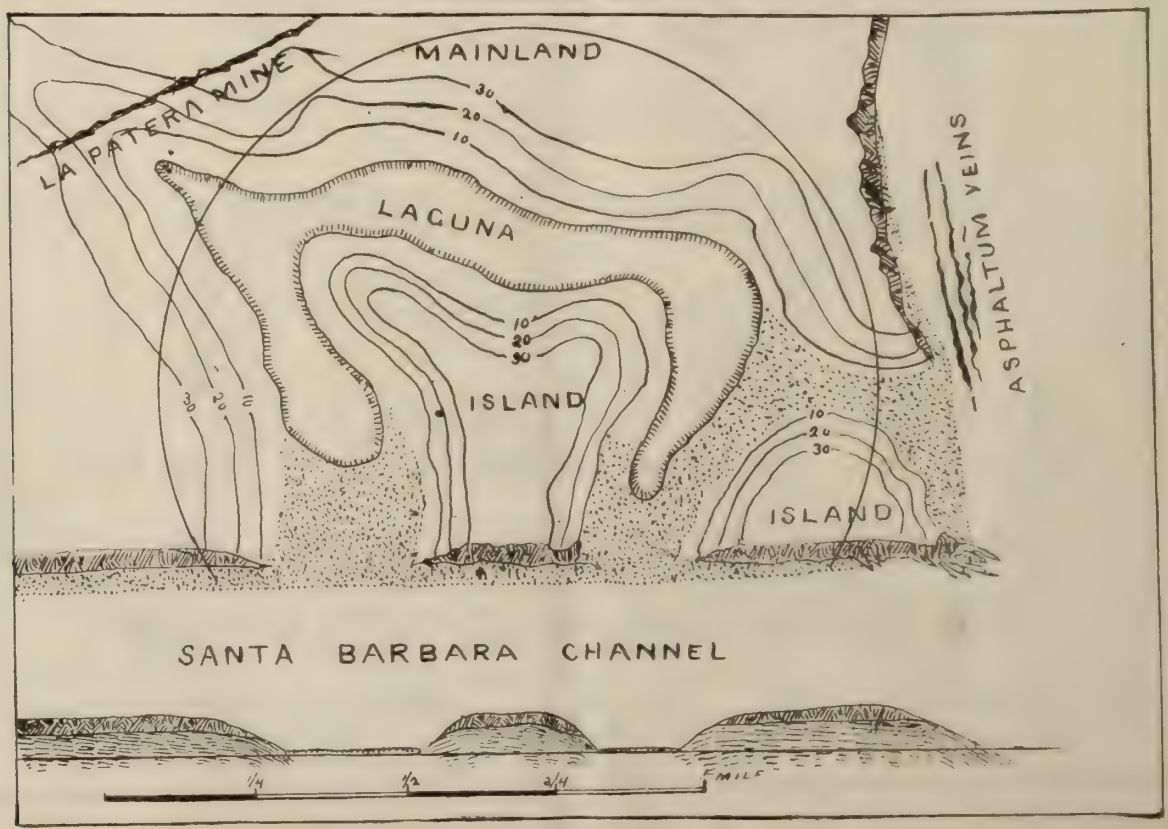
Ilustrations for A. S. Cooper's article "Uplifts and Subsidences," Figures 11 and 12.



MAP OF JENNINGS OIL FIELD, MARCH, 1907.



CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 4 SAN FRANCISCO, CAL., AUGUST 25, 1911. No. 23

Uplifts and Subsidences

(Concluded)

By A. S. COOPER, E. M., Ex-State Mineralogist of California

La Patera Mine

The La Patera mine, Figure 12, lies nine miles west of the city of Santa Barbara, California. It is in close relation with the ocean and lake which surrounds two islands. The lake contains about 60 acres. Along its margin the stratification of the shales show a dip towards the lake from 30 degrees to 40 degrees. The composition and arrangement of the component parts of the soil are the same upon the island as upon the mainland, being composed of debris eroded from higher land and the mountains on the north, showing that subsidence occurred after the soil accumulated on the islands.

The surface of the shale underlying the soil on the islands and mainland has the same height. If the basin of the lake had been formed by erosion by sea or surface water, the shale would have been equally cut off and not bent so as to dip towards the lake. On shore, petroleum oil rises from submarine springs. The oil covers a large area of the ocean's surface with a thin, irridescent film of oil the odor of which can be detected at a long distance.

Ledges of hard asphalt rock exist in the ocean below high tide. They run nearly parallel with the shore.

Surface wells show the existence of water highly charged with mineral substances which carry the odor of petroleum. At a depth of 200 feet, in the mine, the temperature was 105 degrees F. From the La Patera mine (which was discovered by the author), 29,000 tons of rock asphalt was taken. This rock asphalt contained 60 per cent of bitumen and 40 per cent of shale thoroughly mixed. The amount of bitumen present was equal to 87,000 barrels; as ten barrels of ordinary petroleum oil are required to make one barrel of hard asphaltum. A simple computation shows that 870,000 barrels of ordinary petroleum was evaporated to make this quantity of asphaltum.

The vein of asphalt rock shown in Figure 13 from A to B, are over two miles in length and where they have been stripped and the asphalt rock mined they should exceed eight feet in width and judging from other similar veins that have been mined they should reach a depth of more than 150 feet. A computation made from the above estimate shows that these veins should yield over 800,000 tons of asphalt rock. These veins of asphalt rock occur near the outer edge and south of the subsidence shown in the diagram. The fissures into which the asphalt rock was injected were opened by the rocks, clay, sandstone and shales moving towards the center of the subsidence. A well drilled at "C" yielded sulphur water and a small amount of heavy oil having a temperature of 127 degrees F. Red Rock mountain, shown in the eastern end of the diagram, is composed almost entirely of burnt shales and sandstones covering an area of over 600 acres. Burnt shales are ordinary shales which have become impregnated with petroleum oil and which have caught fire either by ordinary means such as brush fires, etc., or by internal chemical action. Bituminous matter and sulphur and the fuels which have burned these shales. They are, therefore, an indication of oil. They vary in color from a pale pink to a bright red. Occasionally they are vitrified, like bricks that have been subjected to a high heat. These burnt shales are found in a number of the oil fields of California.

Excavations made in mining the rock asphalt veins at La Patera mine, near Santa Barbara, and at McKittrick, Kern County, show that at depths of less than 200 feet small stringers of oil enter the fissures between the asphaltum and the enclosing walls, where the oil is evaporated and incorporated with an amount of comminuted shale. At McKittrick these stringers of oil came from the strata of bituminized sand in which oil has been obtained.

Owing to the pressure of superincumbent rocks large asphalt rock veins are rarely found below a depth of 200 feet. At the La Patera mine tunnels from which the asphalt rock was mined, if the tunnels were not worked for a few days, they were slowly filled again with the asphalt rock from the sides and bottom of the tunnels. At Mount Pinal, in theSanta Maria oil fields, are veins of asphalt rock which have been mined. The asphalt intruded from below in a liquid condition into fissures which had opened in the shales near the surface. Some of these fissures contained asphalt rock in commercial quantities. The oil from which this asphalt was formed must have ascended from a depth of over 2000 feet, as wells drilled in the vicinity of these fissures do not develop oil in a large quantity until that depth is reached.

If carbonaceous or bituminous matter are heated with a varying temperature in the presence of sulphur, sulphureted hydrogen, methane and sulphurized oils will be formed, also hydrocarbon gases and vapors. If carbonaceous matter is destructively distilled with varying temperatures, sometimes high and sometimes low, hydrocarbons will be formed, also carbon monoxide, hydrogen and nitrogen. Nitrogenous compounds are nearly always present in carbonaceous matter as is evidenced

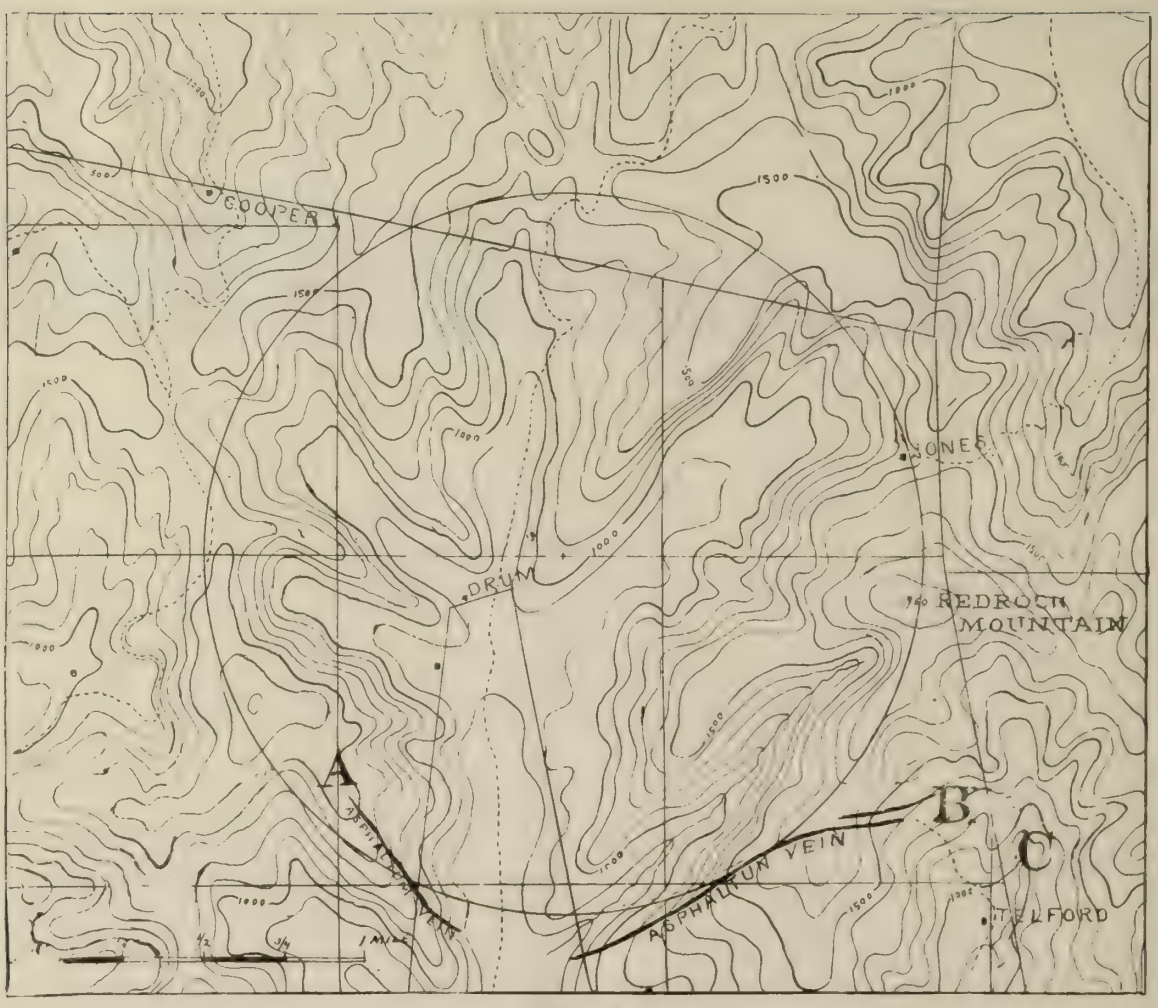


Fig. 13.

by the amount of ammonia derived from coal in the manufacture of gas.

During the distillation under high and low temperatures, carbonaceous matter in the presence of sulphur, nitrogen and other substances, produces petroleum oils which differ in physical characteristics and chemical composition. They may contain chemically combined one or more of the following elements: sulphur, ogygen and nitrogen in varying amounts; in rare instances these elements may be absent. These combinations may be very great in number and extremely complex. Hence, oils in the same stratum and but a short distance apart may vary greatly.

Six miles west of Santa Barbara, California, on the Calera Rancho, and on the ocean shore, as shown in Figure 14, an area of 20 acres has subsided about 20 feet. Of this subsidence four feet occurred in five years. The surface of the subsidence is rifted and seamed and from these openings sulphurous and other vapors and gasses ascend. The ground is hot. The bluff is composed of burnt shales showing tints from a cream to a brilliant red. Water containing salts seeps from the base of the bluff. Shales with carbonaceous material and saturated with bitumen, as well as smoky looking shales, surround the hot places. Near these hot places heavy petroleum oils ooze through the shales. To the eastward and westward thick petroleum oil ascends through the cracks and joints of the highly inclined shales. At "A" is a depression which is probably a subsidence. When marble, limestones or calcareous shells are heated they break down into carbonic dioxide and calcium oxide. The carbonic dioxide, when coming into contact with moisture, forms carbonic acid. Carbonic acid is also produced by the action of an acid on marble, limestones and calcareous shells.

When a hydrocarbon is burned in an insufficient supply of oxygen, oxydation of the carbon is not complete and the product, instead of being carbon dioxide, is carbon monoxide. Carbon monoxide is also formed by passing steam over highly heated carbon.

If carbon gasses are subjected to a very high degree of heat, they will deposit carbon, and the resultant gas will be pure hydrogen. It is a general law of chemistry that whenever a volatile compound can be formed, it is formed. The above are a limited number of the re-actions that take place when carbonaceous matter, limestones, and sulphur are heated together. There are an infinite number of other re-actions, a description of which is too long for this article. Many of them are unknown.

The above described gases, either in solution with water or oil, or free, have ascended through fissures along lines of structural weakness of the earth through thousands of feet of limestones, sandstones and shales.

In Texas and Louisiana, in the broken portions of sub sidences the following rocks and minerals are found: Clay's sandstones, limestones, calcareous shells, gypsum, salt, iron pyrites, petroleum oil, gases and mineral waters hot and cold.

All of these substances are disseminated throughout the broken parts of the subsidences in a most indiscriminate manner as is shown by the drill.

The re-actions of the gasses found in these subsidences in other substances form gypsum, limestone, dolomite, sulphur, iron pyrites, carbonate of iron and other minerals. All the gasses generated in the heated zones that were not and are not absorbed by water or decomposed by chemical reactions with different minerals with which they came in contact, by their bouyancy in associated waters ascended towards the surface and accumulated in the highest places they could attain, or reached the surface and were lost in the air. That these gases are being generated at the present time is attested by their constant escape through surface bodies of water. Abnormal heat beneath the surface also indicates the present generation of these gasses.

Vapors of petroleum oil ascend from these heated places of gas generation and are condensed to a liquid in cooler, broken and porous strata; afterwards they float upwards through fissures, seams and interspaces made by subsidence, until they reach the surface or are arrested in their present usual irregular positions. Destructive distillation of carbonaceous substances removing material from below these subsidences and transferring them as hydrocarbons to upper strata, takes place, making room for subsidence.

Sulphureted hydrogen and sulphur dioxide coming in contact with each other mutually decompose one another, forming water and depositing sulphur. Sulphureted hydrogen coming in contact with oxygen of the air decomposes, forming water and depositing sulphur, these actions and reactions also transferring matter from a lower to a higher level.

It has been observed from the presence of springs, near the subsidences, and proven by wells drilled near them, that there was and still is an upward flow of heated waters in these regions. These waters were highly saturated with salt, dissolved under a high temperature. As the waters ascended towards the surface they were cooled; and as cooled water will not hold as much salt in solution as hot water, salt was deposited. Before this deposition could take place fissures for the ascent of the saline solutions and room for the reception of the salt had to be provided. These fissures and cavities were not made by an uplift but must have been made by a subsidence. These accumulations of salt do not occupy any particular horizon but are found both near the surface and at the greatest depths reached by the drill. The salt was removed from a low level and deposited at a high one, undermining the clays and sandstones and permiting subsidence.

Carbonic acid in solution with hot water at some depth dissolved limestone and calcareous shells to saturation, which, upon cooling and decrease of pressure as it ascended towards the surface, deposited limestone. By these re-actions primary limestones are transferrd from a depth to form secondary limestones in openings in subsidences near the surfaces.

Iron pyrites are formed by solutions of sulphureted hydrogen acting upon iron salts. Gypsum is produced by the action of sulphuric acid upon calcium salts. In the oil fields of California selenite fills the cracks and seams in the shales and other rocks. In many places plates of selenite lie upon the surface at various angles flashing in the sun. Gypsum is also found in California at the mouths of springs from which gas and oil issue.

Zaca Lake

Figure 15 shows Zaca Lake, Santa Barbara County, California. This lake has an area of about 35 acres. Its bed is not bowl-shaped, as is usual with lakes occupying subsidences, but of a cylindrical shape, with a flat bottom. The greatest depth of the lake is 60 feet. At irregular intervals sulphuretted hydrogen enters the lake, turning the waters whitish through its decomposition by the oxygen of the air. Fish have been placed in the lake, but have not been able to survive the entrance into its waters of the sulphureted hydrogen. This lake is evidently a subsidence of recent origin as it is but slightly

Fig. 14.

filled with debris washed in from the surrounding high mountains.

Figure 16, and Conclusion

Figure 16 displays the "holla" on the Jesus Maria Rancho, Santa Barbara County, California. This subsidence is about

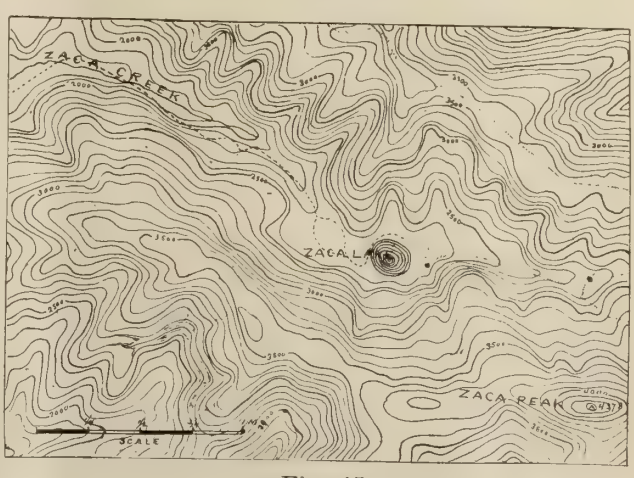


Fig. 15.

100 feet deep and nearly surrounded by steep banks. It lies in highly inclined strata composed of diatomaceous shales which in places are bituminized.

From the various facts adduced there is a conclusion to be

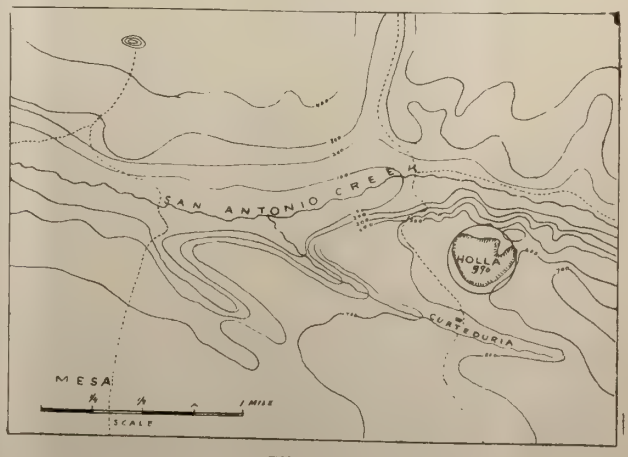


Fig. 16.

derived, and that conclusion is: that as in Texas and Louisiana subsidences yield oil and gas, and as indications note the presence of oil while gas is observed to escape from the waters occupying the subsidences mentioned and from lands adjacent thereto, California subsidences should yield oil and gas. The proof, however, lies in the drill.

California Production for and Field Operations During July, 1911

During the month of July, the oil fields of California produced 6,937,862 barrels of oil. This represents a total gain over the June production of 243,784 barrels, the June production having totaled 6,694,078 barrels, as chronicled in the July number of this magazine.

Oil consumption during June aggregated 5,905,036 barrels; during July, 5,897,048 barrels, a drop of 7,988 barrels for the month, which is inconsequential.

The average daily production, 223,302 barrels, shows an increase over the June daily average (223,136 barrels), of only 166 barrels; this in the face of several large new gushers. The oil production is being restrained to a considerable extent by partial shut-downs.

Average daily consumption, which in July was 190,227 barrels, fell off 6,608 barrels from the June daily average of 196,833 barrels consumed. Adding this 6,608 barrels fall off in consumption to 166 barrels increase in production, plus the average daily surplus of June, and you get the July daily surplus, amounting to 33,075 barrels.

Total amount of oil in storage on July 31st, as shown by table herewith given, amounted to 39,034,282 barrels—a supply probably sufficient for seven or eight months.

During July, 63 new rigs were completed in the various fields of the State. Wells drilling numbered, 616; producing, 4,966; completed, 61, and only 4 abandoned.

The production, rigs completed, wells drilling, wells producing, wells completed during the month, in each separate field, and the name of the county in which field is located are given in detail in the accompanying table, furnished us each month by the Standard Oil Company:

Kern River	Kern	8	11	1,620	11		1,208,070
McKittrick	Kern	5	18	174	1		424,690
Midway	Kern	23	202	469	22	3	1,807,840
Sunset	Kern	3	68	217	12	1	485,150
Coalinga	Fresno	14	135	725	11		1,572,600
Watsonville	Santa Clara		1	5			3,720
Arroyo Grande	San Luis Obispo		3	2			1,200
Lompoc	Santa Barbara		5	18			53,100
Santa Maria	Santa Barbara	2	12	143			108,933
Summerland	Santa Barbara		2	130			6,505
Santa Paula	Ventura	4	41	266	1		41,874
Newhall	Los Angeles		4	77	1		13,294
Salt Lake	Los Angeles		10	255	1		219,212
Los Angeles	Los Angeles			415			37,213
Whittier-Coyote	Los Angeles		24	140			75,117
Puente	Los Angeles			56			2,660
Fullerton-Brea Canon	Orange	1	48	254	1		576,685
Salinas Valley	San Benito and Monterey		2				
Repetto	Los Angeles						
Totals		63	616	4,966	61	4	6,937,862

Summary

	Barrels.
Stocks, June 30, 1911	37,993,465
Production, July, 1911	6,937,862
	44,931,330
Consumption, July, 1911	5,897,048
Stocks, July 31, 1911	39,034,282
Average daily production	223,802
Average daily consumption	190,227
Average daily surplus	33,075

Comparison of June and July Exports from San Francisco

During the month of June there was exported from San Francisco a total of 11,019,690 gallons of crude, napthas, illuminating, lubricating and paraffine and residual oils, valued at $303,154. The gain in the July exports of the same oils was huge. The figures totaling 19,505,878 gallons with a valuation of $494,748. The following table shows the exact status of the exports during the two months, June and July:

	June.		July.	
	Gallons.	Dollars.	Gallons.	Dollars.
Crude	4,327,100	$ 61,833.00	6,132,000	$ 86,600.00
Napthas	19,641	2,959.00	330	35.00
Illuminating	6,583,062	218,094.00	11,405,349	373,837.00
Lubricating and Paraffin	89,887	20,268.00	26,670	6,224.00
Residuum			1,941,529	28,052.00
Totals	11,019,690	$303,154.00	19,505,878	$494,748.00

The total shipments of crude petroleum from all fields in this state in July amounted to 5,421, 515 barrels. The unsold surplus for the month was 1,241,810 barrels.

The Independent Producers' Agency sales for the first half of 1911 amounted to 6,200,000 barrels. In July the Agency disposed of 1,100,000 barrels. The average price was 30 cents. In the last six months of 1910 the Agency sold 4,500,000 barrels.

DIVIDENDS DURING JULY

Dividends aggregating $694,038 were paid during July by California oil companies. The Peerless makes its reappearance with a dividend of $25,000, the proceedes of the sale of the Fulton land at Maricopa. This brings the total dividends paid by the Peerless to the sum of $826,000. The following is the list of dividend payers in July as far as known:

Companies—	Per Cent	Amount
Central	.01½	$ 15,738 09
Claremont	.02	10,000 00
Columbia	.01	9,992 30
Euclid	.00½	1,750 00
Globe	.00½	3,000 00
Homestake	.10	2,000 00
Linda Vista	.01	2,500 00
Mascot	.02	10,000 00
Monte Cristo	.05	25,000 00
Mount Diablo	.03	14,024 55
New Pennsylvania	.00½	2,498 48
Olinda Land	.00½	3,200 00
Palmer	.01	18,020 10
Paraffine	.01	3,000 00
Peerless	.00¼	25,000 00
Sauer Dough	.02½	4,987 50
Section 25	.25	10,000 00
State Consolidated	.00¾	4,231 11
Union Oil	.006	181,015 80
Union Provident		89,620 03
United Petroleum		48,450 60
Western Union	.00½	5,000 00
W. K.	.03	15,000 00
Total		$ 704,038 56
Mexican Petroleum Ltd., Pfd.	.00 2-3	80,000 00

A Report on the Present Condition of the California Consolidated Oil Co.

Written for the California Derrick by Admiral Robley D. Evans, President of the Company

At the instance of the editor of the "California Derrick," Rear Admiral Robley D. Evans, U. S. N., retired, president of the California Consolidated Oil Company, has written a letter thoroughly explaining the present condition of his company, what the immediate future holds in store for its stockholders, the obstacles which the company has had to contend with, and the hopes which the Admiral has for its success. The letter, which is addressed to the editor, personally, follows:

CALIFORNIA CONSOLIDATED OIL COMPANY
Robley D. Evans, President
1170 Broadway, New York

Western Office,
San Francisco.

July 27, 1911.

Chas. Carroll Wright, Esq.,
Editor "California Derrick,"
San Francisco, California.

My Dear Sir:

I am greatly obliged to you for your courteous letter of the 11th instant, concerning the sale of California Consolidated Oil Company's shares in Europe. The agreement of sale for 1,200,000 of the company's shares was executed in Brussels on June 11th, and delivered to the company's counsel, Henry Wellington Wack, in New York, on the 21st of June. Pursuant thereto our attorney intends visiting France and Belgium early in August.

As you probably understand, many governmental details must be complied with in France before shares of an American corporation can be offered for public subscription. The financial men who have agreed to purchase our shares are now at work with our attorney conforming to these requirements. I hope to see the entire transaction between the company and these gentlemen accomplished, so far as the initial payments are concerned, within a few weeks.

Assuming that our European friends fulfill their agreement with timeliness; that lying stockjobbers and piratic hawkers are not permitted to destroy our efforts to develop a California industry; that the California oil fields will survive their present depression and embarrassments; that no financial panic may overtake us in the midst of our work, I see nothing ahead to prevent our acquisition of the Mascot property as rapidly as we can pay for it. As we will receive Mascot stock for every dollar we apply to the company's purchase under our January-April agreements, the company's assets are bound to increase in a ratio equal to the sale of its stock.

But a wilderness of falsehood concerning the company has confused and misled many of its shareholders, some of whom have been defrauded of their stock by dishonest stockjobbers with worthless junk to sell or trade. It is to be regretted that timid, uninformed or hysterical persons invest in the stock of **any** corporation. Thieves are too often lying in wait to despoil them of their property. It is a great pity that some of our shareholders in common with others, have become the prey of the promoters of this nefarious traffic. Unfortunately the company's directors have no control over these meretricious transactions. Indeed, they seldom hear of them until the shareholder has handed his stock to the pirate. You will be serving many small investors by instructing them to shun his allurements, and that dishonest trickery which amounts to larceny.

Recently a firm of stockjobbing botchers of other people's business in San Francisco circulated the falsehood that the California Consolidated Oil Company had issued over 6,000,000 shares of its stock. The fact is that outside of the stock issued for the Yellowstone Oil Company, the California Consolidated Oil Company has issued less than one-fourteenth of that amount of its capital stock.

But the management of the company looks over and beyond these annoyances, which largely find their source in reckless and unworthy quarters, and applies its energies to the accomplishment of legitimate purposes in an industry in which it has increasing faith.

Despite the significant depression in the California oil industry, which I believe to be only temporary, I have every hope for the healthy progress of the California Consolidated Oil Company.

Wishing you success in your own arduous work, I am,

Sincerely,

(Signed) R. D. EVANS.

We will give a thorough consideration of the Admiral's letter later, and without stopping to analyze it here, will now call attention to another letter, of a far different sort and source, which will serve to show in an unmistakeable manner to whom and what influences the Admiral alludes when he says: "A wilderness of falsehood concerning the company has confused and mislead many of its shareholders." Note the following letter from the G. S. Johnson Company, of San Francisco, which until this time we did not know engaged in this kind of business; and which is indeed placed in an unenviable light by the epistle hereunder:

(Note: We understand that this letter was sent to every stockholder of the California Consolidated Oil Company, it being stated that in some way the list of shareholders and their addresses was obtained by the G. S Johnson Company without the knowledge of the company itself).

THE G. S. JOHNSON COMPANY
Incorporated
Oil Investments
Phelan Building, San Francisco, California

Code
Western Union
(Universal Edition)
Cable Address
"Johnco"

General Stock Department
Kellogg Van Winkle, Manager

August 1, 1911.

Mr. S. Asher,
Oroville, California.

Dear Sir:

Within the last couple of days there has a limited market developed on California Consolidated at 6 cents per share. We are of the opinion that whatever you may be able to get out of your California Consolidated at the present time will be simply saving that much money, as the indications are that within from 60 to 90 days from today the stock will not be salable at any figure.

If you desire to take advantage of the present price of California Consolidated by selling your stock endorse your certificate, or certificates in blank ond forward them to us and we will make sale of the same at the highest possible figure.

Trusting that we may receive your certificate by return mail, and assuring you of our best endeavors in your behalf, we are,

Yours very truly,
THE G. S. JOHNSON COMPANY,
(Signed) By Kellogg Van Winkle.
KVW-C.

The stockholder who received the letter given above was surprised to find a market at 6 cents when he had paid ten times that amount, and immediately wrote the officers of the company for an explanation. He got it. Furthermore, it is one of the best expositions of the nature of the methods employed to secure stock for little or nothing, or to "break" an oil company, which we have ever read. It was written by Major John Q. A. Walker, assistant secretary and registrar of the California Consolidated Oil Company in San Francisco. The letter written under date of August 18th, from the company office in that city—(516 Metropolis Bank Building)—follows:

Mr. Samuel Asher,
Oroville, California.

Dear Sir:

The letter of the G. S. Johnson Company as to which you deem it the duty of this company to enlighten you, is but one of a veritable blizzard of such dishonest attempts to despoil our shareholders of their California Consolidated Oil Company stock. If you will read that letter attentively it will convey the only explanation which may be applied to it, namely, that after employing falsehood and scare statements, prophecies

without foundation and sinister intimations of impending disaster, it still solicits the possession of your stock. If in a few months' time the California Consolidated Oil stock will be worthless, why do such California brokerage pirates wish to obtain and sell your stock to their clients? Wouldn't they be swindling their clients?

You will observe that this irresponsible concern trusts that it may "receive your certificate by return mail." If you are curious and wish to see how this game is worked, let this or any other similar outfit get its clutch upon your stock. If you hear from them at all, they might, as they propose, pay you a few cents a share, less their commission, to provide themselves with stock of which they are short, at 30 or 40 or 50 cents a share, or to supply the stock they offered to buy at 28 in circulars they sent to other shareholders on the very day they angled to get yours at six. All these letters are built up in the same fashion by unconscionable and irresponsible grafters upon the supposed ignorance of conditions, the timidity or the carelessness of many small stockholders. Such letters generally open up with a sentence which it has taken the stock jobbing bait writer all night to compose. That sentence is intended to scare you. It is invariably a libelous falsehood which the pirates know your officers are too busy to prosecute them for uttering. Then follows a paragraph designed to lure you into a hasty separation from your stock. Finally they ask you to entrust your endorsed certificate to them. You might as well hand it to any stranger on the street. In all likelihood this pirate broker is in the employ of some one who really desires to buy all the stock he can secure, but he wants it for practically nothing. Hence this process of gulling shareholders out of their holdings.

The Directors of your Company are not nurses. They cannot be the active mentors of every individual shareholder who is unable to see the impious game of such dishonest stock jobbers. Shareholders should themselves discover that traps are being set for them, when they receive letters of such palpable import as the one you indicate.

If you endeavor to buy the stock these brokers sometimes offer at preposterously low figures to scare you, they blandly inform you that such stock has all been sold. The fact is they never had the stock for sale at any price. Their sole object being to secure your stock at the price they pretend some other shareholder was willing to accept. We have known of many of our shareholders to call these stock jobbers' blugs by offering then and there to buy the shares they expose for sale in bad faith, but we know of no single instance where brokers have ever delivered the stock at the decoy price advertised.

It is unfortunate for your Company's Management that a letter of this length and nature should occupy its time to explain to its many shareholders what is all too patent already, but in order to reach a large number of our shareholders whose addresses have never been furnished us and to prompt other inquiring shareholders to exercise their own perceptive faculties in the presence of such oleaginous stock hucksters, we have stepped aside to as briefly as the subject demands state our views on the situation presented.

The value of the California Consolidated Oil Company stock is to be found within the company and its legitimate affairs, not in the foul fictions of those engaged in a nefarious traffic.

In the interest of honorable legitimate business methods towards all investors, we remain,

Yours very truly,
CALIFORNIA CONSOLIDATED OIL CO.,
By John Q. A. Walker,
Asst. Secty. and Registrar.

The letter of the Assistant Secretary and Registrar of the Company is somewhat heated and bristles with condemnation. It exposes the method by which many a company has been broken, and by which many a stockholder has suffered the loss of his stock, only to find later that the stock he had lost confidence in, and which he had sacrificed for either a few cents per share, or worthless certificates of stock in paper corporations which were probably formed for the sole purpose of being used as decoy exchanges, was valuable and marketable at ten times the price he had given his away for. It is a sad commentary on business that that such things can be.

Now to return to the Admiral's letter. Surely it is a strong one. "Lying stock-jobbers," "piratic hawkers," "thieves," "fraudulent," "nefarious," "dishonest trickery," "stock-jobbing botchers of other people's business" are some of the words and phrases used. As this whole article is in the nature of an editorial, whether in the letters, or by the writer, we do not think it out of place to comment here on what is said by any of those quoted, nor to add our own impressions concerning the treatment received by the California Consolidated Oil Company and its officers, or any other company which has received similar treatment.

The Admiral's words are not a bit too strong. They express a condition of fact that has long existed in the oil stock jobbing circles of California. This magazine has pointed out again and again the wrong that was being done to securities by reckless statements made by irresponsible persons. Still further, we have pointed out the crime that has been constantly done in the name of "decency" by lying, hypocritical papers interested with stock-jobbers in lowering the values of good stocks so that promoters could gain the same for practically nothing. There has been a craze for muck-raking to the muck-rake limit. Had the Admiral wished he could have given the name of any number of papers and magazines in the country which style themselves "oil journals," as having printed in their columns at one time or another the alleged fact that his company was on the verge of failure, that it was a high finance game, etc., etc., and it is our belief that he or his company could sue any one of a half dozen papers and secure indemnity for libel. A beautiful way for "oil journals" to aid in developing the oil industry! But that is not their purpose. Their purpose is to give the people what they "think" the people want; muck-rake news. So, to the incalculable harm of investors they give muck-rake news, with and without foundation.. Thus is the interest of the pirate stock broker aided to the uttermost, seemingly in the interest of decency!

We wish to call attention to the fact that this same condition prevails in all great lines of trade in the country. The great Eastern magazines have now been on muck-raking crusades for several years. They have raided every field of corporate endeavor. We venture to say there is not a security in the market that has not been raided at some time or other; certainly there is not a field of industry that has not felt the blighting effects of the pen that lies in a muck-raking crusade. Muck-raking is the craze of the day; likewise the curse of the day. The truth should be good enough; or bad enough. When papers do not hesitate to cry, "Fraud, Fake, Failure," at a company headed by even so honorable a man, a man who has commanded a battleship ueet of sixteen of the greatest fighting vessels in the world, who has lived all his life without a spot to mark his scutcheon and who is rightly termed "The Grand Old Man of the American Navy," we say that when, without an instant's hesitation, or without taking the time to investigate a rank scandal, the newspapers of the country publish their muck-rake stories, they are absolutely beneath contempt and do not deserve the least belief.

Admiral Evans has stated that his company stands on its own feet today and always has; he has shown that his company will do its utmost to make money for its stockholders. With a stock-selling organization of its own, the California Consolidated Oil Securities Company, headquarters in New York, and with the practice of every economy in the management of the company, with the properties it has already acquired, both in California and Mexico, and with the future acquisition of the Mascot property (assured by the security sale to French and Belgian interests), the California Consolidated Oil Company appears to us to be doing splendidly, and we look forward with confidence to a successful future for it, and ample returns to those who have purchased its shares.

Isogeotherm Hypothesis of Mineral Occurrence and Origin

Origin of Petroleum, Coal and Other Carbonaceous Products

By WM. PLOTTS, Whittier, California

Concluded from July

Vertical Extent of Mineral Horizons

All deep well drillers know by practical experience, that the heat increases downward, but in some regions it increases much more rapidly than in others. Unless a flow of water is encountered, it is difficult to get the exact temperature of a hole at any point, because the cool water that is constantly admitted to the hole, has a tendency to cool the rock, which, being a non-conductor of heat, is slow and uncertain about recovering its normal temperature.

Where the heat increases rapidly, it is thought to be owing to the strata being of a less complete non-conductive nature, than where it increases slowly.

No doubt this variation in the increase of heat applies to great depths as well as to the insignificant depth of a few thousands of feet to which we can penetrate with our present facilities.

If, at the time of maximum subsidence of a region, theheat increased rapidly in the isogeotherm of deposition of volatilized carbonaceous matter, then we should expect to find the resulting products confined to a few hundred feet vertically in each case, although there would be other factors, such as the presence of other substances with which each product would have a tendency to blend.

If the heat increased slowly, we should expect the coal for instance, to occur in a considerable vertical scope, a thousand feet in some extreme cases, like for instance, southern Pennsylvania, or northern West Virginia, where the oil likewise occurs a couple of thousand feet blow the coal, and like the coal, has a considerable scope.

We must not forget about the enormous denudation that has occurred almost everywhere, at least wherever there is a semblance of hills or uneveness of any kind. The present surface lines in an oil or coal horizon, or region, should be regarded largely as an accidental circumstance. We frequently see a thousand feet thickness of strata outcropping in plain view, the upper portion of which is apparently as firmly knit by the former pressure as the bottom layers are. This shows that the weight of the one thousand feet of strata was such a small part of the whole pressure to which the strata had originally been subjected, that it made no appreciable difference to our eyes. If, however, we have an opportunity of observing a few thousand feet additional of outcrop above the other thousand, we will probably be able to note a difference, owing to an increase in firmness as we trace the strata downward.

Near the Hill Street tunnel, on First Street, Los Angeles, Cal., there is beautifully exposed, strata tilted almost vertically, resting upon which, unconformably, of course, is a horizontal strata, which is not much less firm than the lower one. Both series are among the most recent deposits, and constitute an object lesson of the immensity of past time.

We must remember that where we can trace a single series of 30,000 feet or so of strata, we must look for the petroleum and coal horizons near the top of the visible series, because the comparatively few thousands of feet of material that had been above them would be more crumbly and less compact, and hence not likely to survive the denudation that had exposed the immense series of strata. Likewise when we observe a bat, or gently rolling landscape, composed of crumbly material, where the bedding can only be detected in the most favorable locations, we may be sure that the valuable minerals, if any, are far below, excepting, of course, in a possible separate series of deposits within rach of the surface.

While petroleum is confined to a definite vertically limited horizon which, like coal, occurs independently of the stratification, it does not occur so regularly in that horizon, being collected more in spots, or irregular belts, and rarely spreads continuously over a considerable stretch of country. The fact that petroleum only occurs in porous strata, often very limited and irregular in occurrence, also, probably has much to do with its occurrence.

All who have read geological text books and official bulletins, may have noticed that the writers or editors sometimes described certain conditions, admitting that they were perplexing and inexplicable, but which are not so at all, when considered in connection with the isogeotherm hypothesis. Several geological writers have stated that it was "a curious fact" that in the Appalachian region, or at least certain portions of it, the petroleum, or coal, in their successive occurrences in a certain direction, occurred successively higher, and in younger strata, or the reverse, over several hundred miles in one direction. It has been admitted that cross-bedding, and other phenomena, in strata that only admitted of certain definite conditions in their formation, occurred in both coal and limestone. Of course, there is nothing wonderful in this, when we regard both of these products as merely promiscuous ordinary strata that has been changed in its chemical contents only, but the old geological conception of their origin requires the performance of miracles in their behalf.

Stratigraphy of the Whittier Oil Field

The stratigraphy in connection with the oil occurrences in the old Whittier oil field, although possessing certain general features in common with all other oil producing districts, contains those fundamental features in such an exaggerated aspect, that the determining of the law of the oil occurrence has seemed inexplicable and past finding out, and while perhaps no other oil field has been so much studied and described, it will perhaps interest many to get still another description, and general deductions from my observations, because, perchance, they "never looked at it that way."

The trend of the exposed strata in this field, is found by much investigation, to average a true east and west, but as the developed portion, which is well defined by numerous failures (at least on its northeast side), extends in a nearly northwest and southeast direction, and is very restricted in width, at least in its northwest end, owing to the steep dip of the oil horizon, it is obvious that oil occurrence along the line of strike of the strata is not very extended, and seldom reaches as much as half a mile.

This is the feature that was so puzzling to the early operators, and many investors still have an aching void in the region of their pocketbooks, owing to failure to locate producing wells a short distance along the line of strike of the strata from good producers.

It might be supposed that whatever was the cause of this general unconformity of the course of the oil belt to the trend or strike of the strata, the continuance of porosity in many of the oil strata, in obliquely crossing the narrow field, would cause great irregularities in the flanks of the general oil belt. But this is not the case, the limits of the field being fairly regular, as represented by developments, oil seepages, and other surface indications; one exception, however, being a considerable seepage midway of the field, and near the line of the

southwestern edge of developments, the rest of the seepages being, of course, on the other, or shallow side.

There has not been a single failure in the defined field, eqcept such wells as were pinched out, or plugged with lost tools, or by failure to shut off the water, while close outside the defined limits, there have been sunk numerous failures, and not a single productive well. All those failures on the southwestern or deep side, however, may be considered as being of insufficient depth, while the northeastern side, representing the outcrop of the oil horizon—as the writer pointed out several years ago—is defined permanently, and nothing of any consequence can be expected there.

This clean-cut limit of the oil field may be accounted for on the supposition that the separate oil strata have little persistence or continuance of porosity, so that the oil has always remained well in its defined limits of original deposition, and indeed this seems to be the case, as seldom can any single stratum be identified with any certainty in adjoining wells.

The old time driller in the Whittier field does not speak of "the oil sand" because he knows that there is no such thing as a definite oil sand there, but there are dozens, perhaps hundreds of them, so many that it is impossible to more than give their mode of occurrence. Perhaps the oil in some of these separate strata is intercommunicable, although they seem to be separated by well defined strata of impervious shale.

The strata in this field dip all the way from 45 degrees in the southeastern end, to vertically in the northwestern end. This is determined by observing the dip of the exposed strata at the surface, by comparing in neighboring wells the depth at which is encountered certain persistent strata that may reasonably be supposed to be continuous from well to well, and by recovering numerous pieces of under-reamings, containing portions of the face of the hole, in which the bedding is plainly marked.

The general trend of the hills or anti-cline conforms closely to the trend of the oil field, so that the trend of the strata cuts obliquely across both. It has often been held by persons who have not themselves investigated, that this is impossible; that the strike of the strata must necessarily conform to the axis of the anti-cline, but this need not follow, as in this case there might have been, and probably was, over the whole region originally, a universal dip of the strata to the south southeast before the anti-cline began to form.

This feature of unconformity of the outcrop of the oil horizon to the horizontal trend of the strata is not at all exceptional, but nowhere else, perhaps, does it occur in such exaggerated form. If, however, we view in perspective, a profile of the oil horizon of this field as it extends into the earth in the direction of the dip of the strata, we find that the same phenomenon of unconformity to the plane of bedding occurs, the oil horizon, as in most other fields, dipping roughly about half as much as the strata does, but as the strata in this field dips very steeply, and in most other fields but slightly, the unconformity here is very noticeable, while in other fields it has not been sufficintly noticed to cause comment.

Here we have under consideration an oil field where the strata stands at such a pitch that it is considerably nearer vertical than horizontal throughout the field; the field extending, not with the strata, but obliquely across it; a narrow belt of oil producing territory with shallow wells and oil outcroppings on one side, denoting the outcropping of the oil horizon, with gradually deepening wells towards the other side where the field is defined by the limitation of depth, the cost and time of drilling the deep wells being heretofore prohibitive.

It must be admitted that this is a very difficult matter to describe comprehensively to those who have heretofore not given it much attention, and people generally have somehow got the notion that oil is a concomitant of certain individual strata, and must necessarily occur in connection with those strata and nowhere else, and it must be confessed that it does appear so in an oil country like, for instance, western Pennsylvania, where, sometimes over an extent of twenty or thirty miles the oil is confined to one or two well defined strata, which can be unmistakably identified for that distance; however, if the observer will view in perspective 100 or 200 miles of that country, he must know that the oil-containing horizon as a whole does not conform to the plane of stratification.

Now what does this orderly, I will not say regular, non-conformity of the oil horizon to the plane of stratification signify? Just this, it gives us the key to the origin of the oil, to its distillation from below by the heat in the earth, and its final deposition in its original isogeotherm, or plane of equal heat, which would rarely or never be in exact conformity with the plane of stratification, and as the region slowly emerged from the hot depths, and the miles of strata above became worn away, the strata continued its tilting, usually on the same order it began, until the oil horizon itself became contorted and dipping, though usually not so greatly as the strata.

The oil at Whittier all occurs in the regular Puente series of formation, composed of shales, sands, and conglomerates. Beginning generally at the base of the hills, and extending south, is a much later formation, resting unconformably upon the Puente. At the Leffingwell ranch this newer deposit extends into the hills in a body of several hundred acres, with the bottom of the canyons cutting through in places into the Puente series, which is noticeably different, even to a novice. At several other places there are detached patches of the later formation, which have so far escaped complete denudation.

This matter of more than one series of deposits, however, is of little interest or value to the oil man, for the lines of demarkation mapped out by geologists, separating the supposed serial deposits with their fanciful names (generally borrowed from far away Britain), is no barrier whatever to the orderly course of the petroleum, and coal and perhaps other horizons, which, scorning such insignificant obstacles, keep right on into and through many named deposits. Even truly separate series resting unconformably upon each other, providing they had reached sufficient subsidence, exert no inuuence whatever upon the orderly course of those horizons.

The continuation of the Whittier field, or rather the outcrop, is in an east, southeast direction, along the Puente hills, and, while the whole oil horizon does not outcrop—portions continuing over the summit where the hills are lowest—it outcrops sufficiently completely, to form a line of seepages to beyond Olinda, about fifteen miles.

This outcropping represents the edge of an immense oil field which has heretofore been considered too deep to successfully operate to any great extent, except near the outcrop, which is somewhat irregular, owing to its non-conformity with the steeply dipping outcropping strata. These strata as at Whittier, trend east and west the whole distance, while the line of seepages along with the groups of wells at Whittier, run southeast; a few miles southeast of that point, bend more easterly, and continue about east, southeast to Olinda, being considerably out of conformity with the bedding the whole distance.

Recent development, in closing up the gaps between the groups of producing wells, has a tendency to show that what was apparently a succession of overlapping oil strata a thousand or so feet apart, with barren strata between, is really a practically continuous outcrop of the whole oil horizon, although somewhat irregular, owing no doubt to the irregularity of porous strata, in which only, the oil can occur, and which is absent at points along this grand outcrop.

At other oil fields in California there are somewhat like conditions, the oil horizon rising abruptly from a great depth, and outcropping in steeply dipping strata, the porosity of the oil sands not being very continuous or persistent, so that although some of the minor oil deposits have been destroyed by surface water having entered them, the near-by deposits are uninjured.

A remarkable feature of this Whittier-Puente oil field is the great diversity in the character of the oil; especially in the gravity, which ranges from a tarry substance too heavy to pump, up to 36 gravity (Baume). It used to be thought that the basic oil was light, and that the heavier oils had become so through the loss of their volatile constituents, but since the field is better developed, it appears that the lightest oils are the lowest in the oil horizon, and as a rule the heaviest are highest in that horizon. It seemed difficult at first to formulate such a rule, because, where the oil horizon cut diagonally across the edge of the steeply upturned strata, the differing oils seemed to be sandwiched in the oil horizon in a bewildering manner, but it is now plain that those deposits that are confined to the northeast side, or underside of the oil horizon, are always much lighter and more valuable than the more persistent deposits that cut clear across the oil horizon, and the very tarry oil is confined to the top of the oil containing horizon. In fact, in nearly every well in California, traces, or small showings of tar are encountered, usually many hundreds of feet above the main bodies of oil, and operators generally have learned to pay no attention to such showings, as they are usually of no great extent. The very light oil deposits also, are generally of limited extent, and the wells rarely hold up as well as those of medium gravity. It must not be assumed, however, that because a strata yields a very heavy oil, that deeper drilling will necessarily develop a deposit of light oil immediately under, although the chances are such as to be well worth the cost of making an extra thousand feet of hole, where there is a considerable area to be proven. In other California oil fields it is also recognized that light oils are most likely to be found lower than the heavier oils, but the practise of classifying each level at which oil is found, as a separate oil "horizon," has confused the matter.

People who object to the subsidence, or isogeotherm hypothesis of petroleum origin, refer to the enormous amount of deposit it would necessitate above the petroleum zones in order to secure the necessary heat to properly distill the product found therein, and ask for proof that there were two or three miles or so of deposit above it.

At several places in California, notably in the Coyote Hills district, it is more than 4000 feet to the oil, and the only reason it is not found deeper at other places is obviously because that is close to the practical limit that can be reached without an outlay o feost which would be prohibitive. Indeed it is only the last few years that it has been considered practicable to go more than half that distance in California, and wells of 4000 feet, cost on an average, at least thirty thousand dollars.

The strata, where it is cut into, 4500 feet above the oil, has the same general appearance and texture, as it has in the oil horizon, or below it. The inference is, that if there had not been several times that much superincumbent deposit at the time of maximum subsidence, the difference in texture in that 4500 feet of strata would be noticeable. Then the temperature at 4000 feet depth, is in the Coyote field, about 170 degrees F. which would amount to about one degree increase for 40 feet. The deposit is tertiary and the universal denudation must have been very great, as in such a friable formation, the rate of elevation would hardly much exceed that of denudation.

But what is especially worthy of our attention is the enormour amount of denudation that would occur in such a formation, before it emerged above the surface of the ocean. Indeed it never would have so emerged, containing the oil horizon intact, had it not been protected by immense masses of coarse flinty sand, the siftings from the thousands of feet of denuded superincumbent strata; and the like masses of similar sand that everywhere protect the emerging beaches, give eloquent testimony to this universal denudation by the waves. Nature in her destructive operations, takes no account of economic values, and it seems that recently formed oil strata like those of California, that have not had sufficient age to harden them, are as often as not, entirely cut to pieces by the wave erosion in their emergence. Examples of such oil horizon erosion can be witnessed at Point Firmin, and Summerland; and the shore of the Pacific for hundreds of miles is littered with splashes of asphaltum and paraffine, that come from the eroded bottom.

Millions of dollars have been needlessly wasted in drilling futile exploration wells in the last 60 years, in insistent attempts to find oil in strata that were supposed to correlate with strata that are oil bearing in a distant locality, but which are entirely out of the oil containing horizon. Those errors are made mostly where the oil fields are being developed in the direction of dip of the strata, where the oil horizon generally passes gradually from a lower, to a higher stratigraphical plane. For instance, where the oil is obtained at, say 1000 feet depth, and it is known that at 3000 feet depth, would be encountered strata, that correlated with oil containing strata in a distant locality. Parties frequently sink wells to the lower level, when the great depth would be entirely out of the possible oil containing horizon for that locality. This has been going on ever since the writer was a boy, and he never heard of an instance where such a venture was successful.

After going a few hundred feet below the known oil containing zone, the chance of encountering oil is less with every foot drilled, regardless of how prolific the strata are elsewhere.

The great irregularity of the occurrence of petroleum in its horizons, and its tendency to occur in extremely prolific deposits on or near the summits of anti-clines, may be accounted for in this wise. As the heated strata subsided, and was being "skimmed" of its volatilized, carbonaceous and other matter, the volatilized matter that was to form the petroleum, would encounter certain strata which would offer more resistance to its progress upward than other strata, and it would develop a tendency to follow lines of least resistence up under the shelving strata, thus gathering it constantly towards the apex of the anti-clines, or towards a region of less vertical resistence.

There are cases, on the edge of large sedimentary areas, where quantities of oil have been found abutting on, and over granitic masses. In Placeritas Canyon, near Newhall, California, oil has been found in small quantities where the wells were started in granite. Possibly the granite had been elevated, and tilted over atop of the steeply dipping sedimentary strata which is near at hand.

The volatilized matter that formed coal, seemed to have more affinity for fine grained impervious strata, where it generally finally lodged, and which would offer little resistance to its upward movement, consequently, coal is found to occur much more evenly, and continuously in its individual deposits or beds.

To Investigate the Pipe Line Business

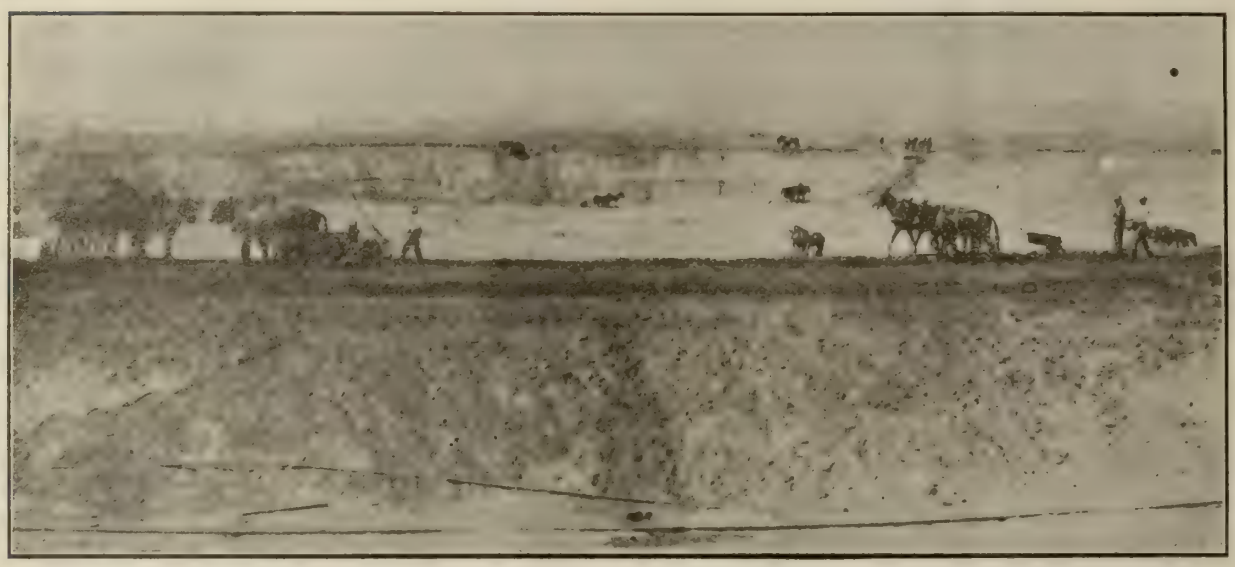
The Interstate Commerce Commissiion has ordered an investigation of the pipe line business of the United States, and has made more than 60 companies defendants in the action which it has brought. Complaints have been received by the Commission from certain parties protesting that the rates and regulations for the use of pipe lines are unreasonable and discriminatory.

The Kramer Consolidated Oil Company, operating near Kramer, San Bernardino Co., tapped an oil sand at 2929 feet, some time back, and will drill deeper into it. Water troubles have held the company at bay for some time.

A. L. Barnes, a well-known driller in the Coalinga field, has sailed for Upper Burmah, in British India, to join the men who left last March to work for the Burmah Oil Company.

CARING FOR THE MILLION-BARREL MONTH

ASSOCIATED OIL COMPANY'S NEW STORAGE RESERV



Photos

750,000-barrel reservoir being rushed o completion on Section 9, 20-15.

(Both of above photos taken from 112 ft. derric

THE STORAGE PROBLEM, in the California Oilfields, is solved by the erection of huge reservoirs such as are shown herewith. Often these vast reservoirs hold more than a million barrels of oil. Process of construction has been described in these pages heretofore. All the great oil companies of California are erecting more storage reservoirs, against the time when oil will not be as cheap as it is now, and, to care for the million-barrel monthly surplus. Standard Oil is increasing its Kern River storage, already amounting to 18,000,000 barrels. Producers Transportation Company is building at the

ASPHALT REFINERIES AT HADLE

The manufacture of asphalt out of California's heavier oils is today one of the greatest developing industries in the State. Further, it is one o the most profitable. The great demand for California asphalt for road construction is causing a number of plants to prepare to operate. In 1901 th combined output of all the California asphalt refineries amounted to only 27,000 tons; in 1910, to 151,000 tons, a heavy gain. California asphalt ha had an uphill fight to gain Eastern markets, due to high freight charges and the fact that Trinidad natural asphalt has been so easily and cheapl mined and comparatively cheaply transported. California asphalt, as compared with the natural product of Trinidad, is vastly superior to the latter Trinidad asphalt tests 56 per cent pure bitumen; California's product, the best on earth, tests 99 and nine-tenths per cent pure. The manufacture an sale for the current year of our asphalts is expected to exceed 250,000 tons. Expenditures on roads in the United States, which are to be largely of as phaltic construction, are estimated at $80,000,000 for the immediate future. The best asphaltic oil in the State is found in the Santa Maria-Palmo field (Cat Canyon), although the Kern County fields produce a splendid product. Heavy oil, when refined, provides mainly a stove distillate, a hig gravity fuel oil, and asphalt. The result is that refiners of fuel oil make approximately 100 per cent more money out of the crude product than d

SURPLUS IN THE CALIFORNIA OIL FIELDS

I THE COALINGA FIELD, NOW UNDER CONSTRUCTION

Lewis,

500,000-barrel reservoir now almost completed on Section 7, 20-15.

Company, on property adjoining that shown).

an Luis Obispo tank farm a 1,000,000-barrel reservoir and will construct others. Storage of the Independent Agency totals over 10,000,000 barrels, hile various other organizations have ample storage to care for their surplus. Evidently oil in storage reservoirs is more desirable to both consumer d sales agency, than when it has to be drilled for. It insures the supply.

SAN LUIS OBISPO CALIFORNIA

oducers who do not refine their heavy oils. The result is seen in the re-opening of old refineries and construction of new ones. It is said that the andard Oil Company will shortly begin the erection of a very large asphalt refinery at the site of the Pt. Richmond plant—the greatest refining ant in the West, at present—and another at the new El Segundo refinery near Los Angeles. The Santa Maria Oilfields, Ltd., has completed plans for asphalt refinery. The Ensign-Baker Refining Company, at Hadley, has made arrangements to enlarge their refinery so as to bring up the capacity approximately 40,000 tons of liquid asphalt per year. They have contracted with the Dome and Palmer Oil Companies for a part of their produc- ns. A new refinery is to be built at Summerland. The Pinal Dome Refining Company is a new corporation in the Santa Maria field which manufac res asphalt among other materials. The asphalt industry appears today to be on the eve of a large advance and is certainly one of the most profitable sinesses connected with the California oil industry. Increasing the asphalt market will increase the consumption of California petroleum in direct tio, and the various new refineries therefore provide another aid in widening the oil market. Between storing and refining the extra million-barrel nthly production is being well cared for.

UNITED STATES GEOLOGICAL SURVEY BULLETINS

Necessity of Amending the Public Land Laws of the Federal Government as seen by Dr. George Otis Smith, Director of the United States Geological Survey.

A Discussion of General Interest in Mining and Oil Circles

(Note—The Editor regrets not to be able to give the full text of Director Smith's address, and substitutes the regular Geological Survey press bulletin for it through necessity caused by lack of space.)

In an address at the twenty-first anniversary of the Michigan School of Mines, at Houghton, Mich., August 9, 1911, Director Smith, of the United States Geological Survey, said that the objects to be sought by amendment of the public-land laws are, first, purposeful and economical development of resources for which there is present demand with retention of such control as may prevent unnecessary waste or excessive charges to the consumer, and second, the reservation to the people of the title to all resources the utilization of which is conjectural or at least the need of which is not immediate. The means that are essential to the attainment of the objects are, first, the classification of the public lands; second, the separation of surface and mineral rights; and, third, the disposition of the lands on terms that will insure the highest use, enforce development, and protect the public interest.

The classification of the public land is essential to the administration not only of such laws as express the principle of separation but also of those whose purpose is to promote the highest use of the land. Under the withdrawal act of June 25, 1910, classification is made possible in advance of disposition, and disposition can be postponed to await needed legislation.

Separation of Agricultural and Mineral Rights

The second step, both in principle and in practice, appears to be one that shall make possible, by legislation, the separation of surface and mineral rights wherever the two estates have values that can be separately utilized.

The chief advantage of land withdrawal and classification lies in their essential relation to the principle of proper disposition of the public domain, the real purpose of public-land administration being to secure such reservation or disposal of the people's land as will assure its highest use. The question of amending the present laws relating to the disposal of coal, oil, gas, and phosphate deposits on the public domain is fairly before the public, as is recognized by the specific mention of these minerals in the withdrawal act.

More Liberality Needed in Coal Law

The coal-land law is unquestionably the most satisfactory of the present mineral-land laws, in that it permits an adequate valuation of the deposits. The present coal-land law, however, has one serious defect, which should be remedied if a leasing law is not enacted. The restriction of the area that may legally be acquired to a maximum of 160 acres for an individual and 640 acres for an association is not in accord with good mining practice. A law designed to promote the practical utilization of coal deposits, whether the system contemplates sale or lease, must provide for the holding of a unit large enough to justify the opening and equipment of a modern mine and to permit its operation on an economical scale. Without such provision for commercial operation too great an advantage is given to the land-grant railroads and the large coal companies that are already in possession of considerable areas of land containing high-grade coal.

The present uncertainty whether the phosphate rock of the public land should be entered under the lode law or under the placer law is conclusive evidence of the need of legislation. As a matter of fact neither of these laws is more applicable to the acquisition of beds of phosphate-bearing limestone than it would be to that of coal beds.

Legislation Imperative for Oil and Gas Development

The most urgent need of legislation for the disposal of mineral deposits is in connection with oil and gas. It is apparent that the placer law, which is none too well adapted to meet modern conditions in mining placer gold, is wholly inadequate if applied to public oil lands, inasmuch as the discovery of oil is made at a late stage in the exploration and development of the land claimed under the law. The need for a better law is imperative, and the legislative action demanded by the situation should not be limited to an attempt to revamp the general placer law but should involve the enactment of an altogether new leasing measure, especially adapted to provide for the sane and equitable development of the oil and gas industry in the future.

New Laws Needed for Metalliferous Deposits

Proposed amendments of the well-established laws relating to metalliferous minerals always excite warm discussion. Although the opinion of mining men in general favors revision of the mining laws of the United States and although commission after commission has been appointed by various bodies to suggest improvements, the statutes have remained practically unchanged for nearly 40 years, while the geology of ore deposits and the technology of metal mining have made marvelous progress.

Speaking of the "law of the apex," Mr. Smith declared it inadequate, and expressed his opinion as to enforced development, saying:

A most important provision in any amended mining law would enforce development—a provision embodied, it is true, in the present law but not made effective in its enforcement. This requirement of actual use as a condition of occupancy of mineral land can not be regarded as either novel or radical.

Either a Leasehold System or Revision of Mineral Laws Desirable

The remedy, then, for the existing evil of idle mining property must be sought either in the adoption of a lease-hold under which the Government can enforce operation—a system which fully attains the desired end of promoting development in Australia and New Zealand, according to the reports made in 1907 by Geologist Veatch, of this Survey, to the President—or in the thorough revision of the existing system. Radical amendment of the present law is necessary in order to afford a nearer approach to equality of opportunity. Some limitation should be put on the number of claims which an individual can locate in each mining district, and the prevention of monopolization would be furthered by the rigid enforcement of assessment development.

Investigation of Coal and Oil Resources by Survey in Alaska

In the same press bulletin giving the above extracts from the speech of Director Smith, of the Survey, the information is given out that there are fourteen survey parties, comprising in all about fifty men, now at work surveying and studying the mineral resources of Alaska. Mr G. C. Martin, of the Survey, will visit the Katalla oil field of which so much has been heard lately, and of which we ran photographs some time since. The Kenai Peninsula, coal resources of which has lately become the scene of developments of questionable lode mining are also being studied.

Coal and Oil in California

California's production of coal in 1910 was 11,164 short tons, with a spot value of $18,336, according to E. W. Parker, of the Survey.

Our own figures show a much larger output, but the Survey continues:

The small production of coal in California is offset by the enormous increase in the production of petroleum, most of which is used for fuel. The oil produced in California in 1910 aggregated between 65,000,000 and 70,000,000 barrels, which, on the basis of 3½ barrels of oil for each ton of high-grade coal, would be equal to a production of nearly 20,000,000 tons of coal.

The use of petroleum by the transportation and manufacturing industries of California has practically eliminated coal as a steam-raising fuel in the State. Oil is also used in the manufacture of gas which is employed for cooking and for heating residences as well as for lighting. Oil is now also coming into use as a direct fuel for household purposes.

After mentioning the fact that about 15,000,000 barrels of California oil was consumed by locomotives in 1909, and 18,000,000 barrels in 1910, the following figures are given out in another press bulletin:

The total consumption of fuel oil was probably between 35,000,000 and 40,000,000 barrels in 1909, and between 40,000,000 and 50,000,000 barrels in 1910. The probability is that the consumption of fuel oil displaced about 10,000,000 tons of coal on the Pacific Coast in 1909, and between 11,000,000 and 12,000,000 tons in 1910. The per capita consumption of coal in California, Oregon, and Washington averages not much over one ton, while the average consumption in the United States as a whole is about five and one-fourth tons for each inhabitant.

Specifications for the Purchase of Fuel Oil for the Government

Technical Paper No. 3, recently issued and from the pen of Mr. I. C. Allen, discusses the specifications for the purchase of fuel oil for the Government, and gives directions for sampling oil and natural gas. The bulletin heralding this paper, and giving a brief of its contents, follows:

In determining the award of a contract, consideration will be given to the quality of the fuel offered by the bidders, as well as the price, and should it appear to be to the best interest of the Government to award a contract at a higher price than that named in the lowest bid or bids received, the contract will be so awarded.

Fuel oil should be either a natural homogeneous oil or a homogeneous residue from a natural oil: if the latter, all constituents having a low flash point should have been removed by distillation; it should not be composed of a light oil and a heavy residue mixed in such proportions as to give the density desired.

It should not have been distilled at a temperature high enough to burn it, nor at a temperature so high that flecks of carbonaceous matter began to separate.

It should not flash below 60 degrees C. (140 degrees F.) in a closed

Its specific gravity should range from 0.85 to 0.96 at 15 degrees C. Abel Pensky or Penski Numbers to 60

(59 degrees F.) the oil should be rejected if its specific gravity is above 0.97 at that temperature.

It should be mobile, free from solid or semi-solid bodies, and should flow readily, at ordinary atmospheric temperatures and under a head of one foot of oil, through a four-inch pipe ten feet in length.

It should not congeal nor become too sluggish to flow at 0 degrees C (32 degrees F.

It should have a calorific value of not less than 10,000 calories per gram (18,000 British thermal units per pound); 10,250 calories to be the standard. A bonus is to be paid or a penalty deducted according to the method stated under Section 21, as the fuel oil delivered is above or below this standard.

It should be rejected if it contains more than 2 per cent water.

It should be rejected if it contains more than 1 per cent sulphur.

It should not contain more than a trace of sand, clay or dirt.

Each bidder must submit an accurate statement regarding the fuel oil he proposes to furnish. This statement should show: The commercial name of the oil; the name of designation of the field from which the oil is obtained; whether the oil is a crude oil, a refinery residue, or a distillate; thename and location of the refinery, if the oil has been refined at all.

The fuel oil is to be delivered f. o. b. cars or vessels, according to the manner of shipment, at such places, at such times, and in such quantities as may be required, during the fiscal year ending.....

Should the contractor, for any reason, fail to comply with a written order to make delivery, the Government is to be at liberty to buy oil in the open market and charge against the contractor any excess of price, above the contract price, of the fuel oil so purchased.

Copies of this technical paper may be obtained by addressing the Director of the Bureau of Mines, Washington, D. C.

CALIFORNIA DERRICK

The Oil Authority of the Pacific Coast

Published Monthly

CHARLES C. WRIGHT, - - - - - - - - - - Editor and Publisher
PAUL W. PRUTZMAN, - - - - - - - - - Consulting Scientific Editor

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This number of the California Derrick has been delayed a few days in issuance, due to a complication of causes. We trust, however, that the contents will justify the delay for this one time.

"The situation in the financial centers of the East becomes, if possible, more complex," says the Mining and Scientific Press. Too much muck-rake, too much robbery on the exchanges in times past, too much Western opportunity, especially California Opportunity, is our diagnosis.

If the Government continues to sue and can take from the various individuals now in control of property, that which they have developed and obtained in the beginning without intent to defraud, will there not be shortly a Government Bureau to run a majority of the hitherto private enterprises of the entire country?

"Throughout England the kerosine war of prices continues with unabated fury" says the London Petroleum Review. Strange how people will cut each others throats to cut the customers throat in the long run! We wonder if the consumer does not look forward with dread to the cessation of hostilities.

The Drake Memorial Museum is to be erected from the contributions of oil men the world over. Individuals are requested not to erect any museum in memory of Col. Drake in competition with it. The museum will contain a splendid petroleum reference library, a library such as has long been desired, and is a fitting memorial to the memory of Col. Drake.

Dividends continue to be paid with regularity, in spite of the slump.

California Asphalt, the $100,000,000 Industry! will be the next cry of the promoter.

The time to buy California Oil Stocks is NOW.—Not when they have risen to their real or to inflated values again.

Fifty million barrels of storage is not now looked upon as such a calamity after all. The Standard seems to be very willing to buy oil at its present price to lay aside for future consumption. Is it because there is going to be a tremendous increase in consumption with the opening of the Panama Canal?

The Union Oil Company of California, whose horn has been tooted from everlasting to everlasting, because it has acted the "friend" of the Independent Producer, seems to have looked out for the Union alright. At least that is the opinion of Dunn, Barrett, Hodgkinson and Fried. We wonder if there would have been the same sort of "kick" if either the Standard Oil Company or the Associated had controlled the Lakeview Gusher?

The Diesel Engine is going to make the steamless liner the most familiar sight on the ocean within the next ten years, according to a well-known authority. But whether the Diesel engine or the mere changing to oil burners routs the coal fuel industry, the California Oil Industry will benefit.

Most remarkable disintegration of a corporation ever known: Dissolution of Standard Oil.

While there are dozens of new "oil fields" coming into prominence all over the country, California continues to "deliver the goods".

The pirates forgot that Admiral Evans is a fighting man.

The California Oil Industry will have a grand display at the Panama-Pacific International Exposition.

That "back-haul" decision will reduce the cost of drilling a well on the West Side to awonderful degree and will materially facilitate the shipment of oils from the West Side fields, and thus materially aid in the payment of dividends by West Side companies.

Total amount of exports for the fiscal year ending June 30, 1911, were given as 1,499,744,096 gallons valued at $92,146,-924. This is a drop in price but an increase in exports over the preceding year, when 1,460,675 gallons were shipped for which $94,616,390 was received.

Mexico's present oil production per day totals the stupendous output of 150,000 barrels and this could be increased to 200,000 barrels by merely letting out a few new wells which have already been drilled to the top sand. The present production is however, just about 50,000 barrels per day too great for the companies which produce it to handle; that is, reports have reached us to this effect.

The report that the Asiatic Oil Company has purchased the Bullshead refinery at Martinez has been denied officially to this magazine by Mr. Gallagher, room 914 Kohl Building, San Francisco, the Asiatic's representative. Mr. Gallagher smiled when asked if the Asiatic owned the Bullshead and declared that there "was nothing to that fairy tale".

It is estimated that the Producers Transportation Company will run 280,000 barrels and the Associated 120,000 barrels of oil out of the Coalinga field during the present month, practically the same amount that was run during July. The Premier is known to have shipped in excess of 15,000 barrels already, and probably will have shipped twice that amount by the end of the month.

The following from the San Francisco Chronicle is of interest:

'The Associated Oil Company of California has filed complaint before the United States Interstate Commerce Commission in Washington, D. C., against its former co-owner, the Southern Pacific Company, and asks for the reparation of $13,468, which, it claims, the railroad company overcharged it for carrying crude oil from McKittrick and Olig through Bakersfield to Prescott and Seligman, Ariz. The rate alleged to have been charged from McKittrick to Bakersfield was $3.35 per ton, while the rate from Olig to Bakersfield was $3.55 per ton. The complaint alleges that proper rates should have been 20½ and 30 cents per ton.

"This suit will be interesting from the fact that at the time the hauling was done and the excessive charges made the Southern Pacific Company was the owner of 51 per cent of the Associated. Evidently the Associated was the goat."

The News from This Field is Written By
GUY H. SALISBURY—California's Best Known Oil Correspondent

Kettleman Hills Information

From information received from parties who have been through the Kettleman Hills, we are informed that there are several shut downs. The advice that have come to town are rather conflicting, but gathering a little from them all, we can make a fairly correct report on the present conditions. The Medallion Oil Company, Section 20, 22-18, is 4230 feet deep, 8¼-inch casing, with Well No. 1, one of the long strings of casing in this field. The formation is black shale. The Coalinga-Kettleman Oil Company, Section 2, 22-17, in Well No. 1, is about 4170 feet deep, 8¼-inch casing; the formation is a very dark shale. This well was started and drilled to this depth in one year, a record for the Coalinga field. These companies are only shut down temporarily; they have sufficient funds to go ahead. One of the superintendents went to Los Angeles last week to consult Ralph Arnold, the geologist, he believing that the bit is now not far from an oil sand. The formations that have been penetrated have not carried oil in sufficient quantities to warrant a very thorough test. On good authority we are informed that the above companies have spent over $200,000 in developing, which includes the miles of good roads and water wells and pipe-lines to conduct the water through these properties. The other companies in the hills, the Esperanza Consolidated Oil Company, the California Counties, the Baltimore Oil Company, and a few other companies, are still at work. The wagon roads, the water lines and the general conditions about the properties in this district indicate the confidence the various concerns operating have placed in the geological reports that they have received from prominent geologists in this State. It would appear that the above named companies are preparing to go ahead on one of the deep wells to make a full test of the district. Parties who have worked on this formation contend that in part it is very similar to the formation of the Coalinga-Mohawk Oil Company, Section 12, 20-15.

Coalinga Blue Moon Property Sale

The sale of personal property of the Coalinga Blue Moon Oil Company, Section 6, 21-15, was not held last week as scheduled, as a restraining order was issued from Judge Welbourn's court, Los Angeles, which again postponed it. The order of sale was first issued under a judgment out of the Superior Court of this county, in favor of the J. F. Lucey Company, their claim being for oil well supplies, amounting to about $800, other claims were included enough to make the judgment $7500. The personal property is estimated to be worth about $15,000; thus, there would be sufficient to satisfy all claims if sold. This sale was first advertised to take place more than a month ago, but was held up by the North Pole Company, who own the land. They secured an injunction to restrain the sheriff from selling the tools that were being used on the Blue Moon Well No. 1, that was being re-drilled, to put it back into shape. This last move was made in the interest of some stockholders (at least this is presumed), who seek to present a petition to have the company adjudged a bankrupt.

Pulvadero Oil Company

The Pulvadero Oil Company, Section 2, 21-16: The company is further south on the Coalinga Anticline than any of the east side companies. Their well is over 2470 feet deep; 10-inch casing. The formation from 1800 feet to about 2300 feet was very dark shale, intersperced with four separate layers of sand that made a small showing of oil. The regular east side formation with marine shells and sulphur water, have been passed through. It is claimed that the Mohawk Well No. 1 entered the oil sand at 3960 feet, five sands having been passed through before reaching the pay-sand. The sand that the Mohawk got at 3200 feet appears to be the sand that the Pulvadero got at 1800 feet, at least it is claimed that the sand is the same in appearance. In the Pulvadero there has been five feet of black shale between the sands. There has been considerable gas at times, and other encouraging indications present.

Commercial Petroleum Well, Abandoned, Flows Light Oil

The Commercial Petroleum Company, Section 12, 21-14, which operated on this section about five years ago, drilling Well No. 1 to about 1450 feet, encountered a heavy flow of water; also, a gas pressure that sent the water, sand and oil over the crown block.

With this flow was quite a showing of oil, besmearing the derrick. In an effort to bail out the water the bailer was lost, every effort to fish it out failed, and the well was abandoned. About two years age the oil began to rise in the pipe, in spite of all the obstacles in the hole, and oozed over the casing head. The flow of oil has increased until now the oil is flowing a small stream over the casing head and running down the gulch. The oil is of a light gravity and the present condition has attracted the attention of property owners nearby.

Producers Transportation Company Information

The Producers Transportation Company have concentrated their office business at San Luis Obispo. The business of the field will be attended to by station men who will report daily by telephone to the main office, the same as is now done with the Bakersfield business. The work on the pipe-line began about two years ago; since that time the company has maintained an office in the Union Oil Building on Front Street, with Mr. E. H. Gould in charge. Mr. Gould will have charge of the main office at San Luis Obispo. The duties of Mr. Gould will necessitate his visiting this field occasionally and needless to say he will be welcomed by his host of friends.

Coalinga National Petroleum Company Erects Topping Plant

The Coalinga National Petroleum Company, Section 8, 20-15, Well No. 1, has been cleaned out and cemented at 2645 feet.

This, it is believed, will shut out the water that has caused so much trouble. The well will be on the beam this coming week. There is a "Topping Plant" being erected on the property, the purpose of which is to separate the water and other base substances from the oil, that the oil may be marketable. The plant can be converted into a refinery to handle the higher parts of the oil when required. It is possible that some of the nearby companies may run their oil through this process to remove the water and base substances.

K. T. & O. Continues Improvements

The Kern Trading & Oil Company, on Section 35, 19-15, have enlarged the cook-house, have built a new bunk-house, and the increased accommodations will care for fifty men more than are now housed on this property. It is expected that considerable new work will start up in the very near future. On Section 31, 20-15, well on location 53 is being spudded in. On Section 7, 20-15, Well No. 47 is being drilled in; on the east line of this section there are six completed rigs ready for the driller. The company has about 34 strings of tools running in the Coalinga field today, and is the largest single company in the field.

Coalinga-Mohawk in Good Shape

The Coalinga-Mohawk Oil Company, Section 12, 20-15. This is the first company to drill on the east slope of the Coalinga Anticline; they brought in a gusher in March, 1910, producing between 4000 and 5000 barrels per day when she came in. The well was finished at a depth of 3800 feet and produced for over one year, then sanded badly and was cleaned out to 4000 feet; is now on the beam doing 300 barrels of clean oil, free from silt and water. Well No. 4, situated about 300 feet south of Well No. 1, was brought in about ten days ago, was put on the pump and made 850 barrels per day. This well is on the east slope of the anticline and about the same distance as No. 1.

Lake View Oil Company

The Lake View Oil Company, Kings County, Section 26, 21-17. Well No. 1 was reported to be 3800 feet deep at the point where drilling was stopped; 4¼-inch casing was used. Several sands were passed through that had a showing of oil, but no thorough test was made. The company will "back up" the second time; this time will stop at 2800 feet and make a thorough test of the sand, the log showing that there was some oil in the sand. It is only a matter of a few days when the hole will be in order to make this test.

Pluto Attracting Attention

The Pluto Oil Company, Section 19, 25-19. Well No. 1 is reported to be over 2750 feet deep, 8¼-inch casing. The adjoining property owners have been buying stock in the Pluto that they may assist in the development of the property, thus proving in part their own property. There have been many conflicting stories about this well. There appears to be no doubt about the well being in an oil sand (the first oil sand struck by this company), and the well is being watched very closely.

California Oilfields, Ltd., Continues Developing

The California Oilfields, Ltd., on Section 10, 19-15, have graded the foundations for the rigs for Wells No. 7, No. 8, and No. 9; the material for the rigs is on the ground, ready for the rig builders. Work along the east line of this section is being pushed rapidly to protect the line, as the Kern Trading & Oil Company are drilling on Section 11, 19-15. On Section 34, 19-15, Well No. 16 was completed several days ago and is now making over 450 barrels per day.

Coalinga Hub to Make Test

The Coalinga Hub Oil Company, Section 22, 21-15. The well is shut down waiting for wooden sucker rods to pump it in order to make a test; this has been decided upon that the value of the well may be determined. A shot was placed in the hard formation and resulted in a showing of oil.

Coalinga Security Oil Company

The Coalinga Security Oil Company, Section 8, 20-15, are drilling a water well which will be completed this week at about 300 feet. Oil Well No. 1 is producing, doing better than 250 barrels per day. The two gauge tanks, 1250 barrels each, are full; also the sump holes.

Azores Very Deep

The Azores Oil Company, Section 26, 21-15, Well No. 1 is now 4060 feet deep, 4¼-inch casing. At 4010 feet a layer of marine shells were passed through, the formation is again assuming the regular oil formation

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Standard Oil Developments

Standard developments in the north, that is, at Seattle, are as follows:

The Standard and Asiatic Oil Companies are joining in certain work at their Richmond Beach storage sites, according to reliable information. The work consists of filling in the water front acreage of both companies at the location mentioned. It will be re-called that the Asiatic Company purchased thirteen acres here and that the Standard immediately thereafter purchased all around the Asiatic, if our informant was correct. Both the Standard and Asiatic Company are now said to have come to terms with the Puget Sound Bridge & Dredging Company to fill in their land, which is marshy. It is stated that 200,000 cubic yards of earth will be required to raise the Standard's property to the desired level. After sixty days it is expected that the Standard will begin the erection of its storage tanks, five in number and each of a capacity of 55,000 barrels. Ultimately the company will have storage for 1,000,000 barrels of refined, as this is to be the largest refined oil base on the Pacific Coast.

The Standard secured a large acreage in the La Habra Valley recently and will probably expend $150,000 there before any returns are received. Work on the tank farm at Northam, in the southern part of the valley is being rushed. A number of 55,000-barrel-capacity steel tanks are going up at Northam. They will be connected by pipe-line with the El Segundo refinery (Manhattan Beach). Standard is keeping up with all competitors in the erection of new storage. In the Kern River field eight 500,000-barrel reservoirs are being erected on Section 1, 29-27. The company already has 18,000,000 barrels of steel and reservoir storage in Kern River and all of it is occupied. Nevertheless it is accumulating all the oil it can secure at the reasonable prices prevailing, according to a correspondent. The Standard suffered $40,000 damage by fire on the 13th inst., when the Kern River warehouse and loading rack was burned. The warehouse was totally destroyed; contents valued at $30,000, insured. The loading rack was damaged only.

The Standard has purchased some 600 acres of land in the McKittrick District. The location is given as Section 16, which is or was school property and patented land, and is, therefore, beyond Government investigation. The Midway Driller says that the best well brought in in the Midway region recently, belongs to the Standard Oil Company. It is located on Section 20, on the flat east of Taft. It mas finished with 3-inch casing and flowed at the rate of 2000 barrels a day. The company has two other wells on the same section. The Standard also has a new well in the Buena Vista Hills that is stated to have produced 5000 barrels a day in its initial flow. The well lies west of Taft. Latest information concerning the El Segundo refinery plant is to the effect that the company has applied to the War Department and to the Los Angeles County Board of Supervisors for permission to construct a pier 4000 feet in length and 70 feet in width out into the ocean from the El Segundo refinery site, thepier to accommodate the company's pipe-lines and to be used as a wharf for thecompany's ships; it is said this will be the greatest shipping pier in California.

Dissoultion of Parent Company

The following communication, addressed to the stockholders of the Standard Oil Company, of New Jersey, the parent corporation of all the Standard Oil Companies and affiliated oil corporations, explains the method of re-organization to comply with the decree of the United States Supreme Court in order that it may meet with the provision of the Sherman anti-trust law. The communication, which was signed by H. C. Folger, Jr., Secretary, dated July 28th, is as follows:

Letter of Secretary Folger

"Obedience to the final decree in the case of the United States against the Standard Oil Company (of New Jersey) and others, requires this company to distribute, or cause to be distributed, ratably to its stockholders the shares of stock of the following corporations, which it owns directly or through its ownership of stock of the National Transit Co., to-wit:

List of Companies

"Anglo-American Oil Co., Limited, the Atlantic Refining Co., Borne Scrymser Co., The Buckeye Pipe Line Co., Chesbro Manufacturing Co., Crescent Pipe Line Co., Cumberland Pipe Line Co., incorporated, Eureka Pipe Line Co., Galena Signal Oil Co., Indiana Pipe Line Co., National Transit Co., New York Transit Co., Northern Pipe Line Co., Ohio Oil Co., Prairie Oil and Gas Co., Solar Refining Co., Southern Pipe Line Co., South Penn Oil Co., Southwest Pennsylvania Pipe Lines, Standard Oil Company (California), Standard Oil Company (Indiana), Standard Oil Company (Kansas), Standard Oil Company (Kentucky), Standard Oil Company (Nebraska), Standard Oil Company (New York), Standard Oil Company (Ohio), Swan and Finch Co., Union Tank Line Co., Vacuum Oil Co., Washington Oil Co., Waters-Pierce Oil Co.

"Such distribution will be made to the stockholders of the Standard Oil Company (of New Jersey), of record on the last day of September, 1911; and, for that purpose, the transfer books of the company will be closed on the 31st day of August, 1911, at 3 o'clock p. m., and kept closed until the date when said stocks are ready for distribution, which it is expected will be about December 1, 1911.

"Notice of the date when said stocks are to be distributed and of re-opening of the books will be duly given."

Standard Oil's Wealth

The following, from the "New York World," will be of especial interest at this time: The Standard Oil Company has a capital stock of $110,000,000, of which $100,000,000 is common and $10,000,000 is preferred. It is supposed to have a surplus of about $500,000,00.

The cash assets of the company, according to the last annual report, were about $388 a share. These assets do not include the value of the company's oil above ground, which is figured at $300,000,000, or about $300 a share; so that in actual liquidation the value of the Standard Oil stock would be about $688 a share.

The company has 8000 miles of trunk pipe lines, 75,000 miles of feeders and controls 70 per cent of the refining business of the country, having twenty-two refineries, each with a daily capacity of from 15,000 to 30,000 barrels.

It has erected and maintains oil supplies in nearly 4000 stations throughout the United States, holds 80,000,000 barrels of oil continually in reserve and requires 9000 tank cars and 5000 tank wagons to handle initial domestic distribution.

More than one-half of the company's refined products is consumed abroad, 200 vessels, including sixty ocean tank steamers, being engaged in transporting its products, and this foreign business has brought to this country more than $1,000,000,000 of foreign gold.

The company employs 70,000 men, has a pay roll of $150,000 a day, and in forty years of corporate existence has had no labor troubles.

Independent Agency and Producers Transportation Company Developments

The executive committee of the Independent Producers' Agency has formulated a plan which will be submitted to the members in September at a meeting to be called for that purpose. Certificates will be issued on storage oil on the basis of 25 cents a barrel, to bear interest at six per cent per annum. This plan, it is said, will enable the producer to operate his plant without curtailing production. The sub-committee recommended a guaranty clause that the oil would not be sold for less than 25 cents a barrel, but the clause was not adopted.

The interest will be taken out of the monthly sales of oil. After paying the interest on the storage oil, 7 per cent interest on the bonds, operating expenses of the storage company, taxes and insurance, and providing a sinking fund for the retirement of bonds, the agency will save 2½ cents on storage, based on the sum it is now paying, and the oil will be insured. In addition the storage plant will be paid for in ten years. The surplus oil on hand in the agency, exclusive of pipe line and field stocks, is about 10,000,000 barrels. Under the new plan there will be storage for 20,000,000 barrels.

President L. P. St.Clair says that the proposition to reduce the number of agency directors is meeting with favor, also that he is well satisfied with the trend of business and that the production and storage throughout the state are well justified by the conditions. He stated that there was no fear for the future of the business, and that the only disturbing element he saw at present was the output of the new Lost Hills and Belle Ridge districts; if they turned out large producers of light oil it would make things harder for the Agency; otherwise "there is nothing to worry about." The financing of the storage company has already been arranged. Following we quote the interview given the Bakersfield Californian by Mr. St. Clair on this subject:

"While the agency is in good shape at present and conditions are very satisfactory, the storage company will do much for our organization. The company already is fully financed. Arrangements have been made with foreign capital to take over the entire bond issue of $2,500,000 and $1,000,000

of this amount is lying in the banks now waiting for us, the remainder to be supplied as we need it.

"In regard to the business of the agency, it is in a very satisfactory condition. We are beginning to realize on the contracts we entered into a year ago. These contracts when made were for future deliveries and they are coming in to a nicety now. Our deliveries to the Great Northern are increasing. We have started on the Canadian Pacific contract and this month we make first delivery on the Treadway Island contract, which calls for 25,000 barrels a month. The contract with the Nicaraguan government, while not a large one, is at a very good figure, and I anticipate that we will derive a great deal of benefit from it. Private concerns will undoubtedly follow in the footsteps of the government and take up the use of liquid fuel."

Legal Matters

The law courts in the State of California are very busy all the time with oil entanglements, but never more so than at the present, when cases of tremendous moment are pending. Of these the greatest is that just instituted in the United States Circuit Court in Los Angeles, where a complaint and summons have been served upon the officials of the Southern Pacific Railroad Company attacking title to the rich oil properties held by the Southern Pacific Company under the subsidiary K. T. & Oil Company, and other oil corporations in the Coalinga field. The properties are valued at between thirty and fifty million dollars. They are in the heart of the Coalinga field and are being developed very rapidly. The following is from the San Francisco "Chronicle," which is the only authority we have on the matter thus far, our own correspondent not having written us concerning the matter:

"The plaintiff is the People's Development Company, a corporation, and the defendants are the Southern Pacific Company, the Southern Pacific Railroad Company of California, Homer S. King, James K. Wilson, trustees; the Central Trust Company of New York, the Kern Trading and Oil Company, the Confidence Oil Company, W. W. Machen, M. L. Wey, M. Madson, the Aztec Oil Company, the Penn Coalinga Petroleum Company, the St. Paul Consolidated Oil Company, J. L. Bryner and Julius Fried.

"A year and a half ago the Government withdrew from entry all its oil lands, but before the withdrawal fifteen or twenty citizens staked out, filed mineral locations upon and recorded as mineral claims all the oil lands of the Southern Pacific Company in the Coalinga district where the company had developed oil and was taking it out of the wells of the Kern Trading and Oil Company and other working properties. It is alleged that the Southern Pacific never staked or recorded or filed upon these lands as mineral claims, but held them under the railroad patents. Thomas C. West and Fernand de Journel, composing a law firm in this city, united these locators and formed the People's Development Company, which took deeds from the original locators, and has started suit to obtain 3200 acres, including Sections 25 and 31, the richest sections in the Coalinga field.

The company has been financed to make a bitter fight for the possession of the property, and West & De Journel are re-enforced by Henry M. Hoyt, Jr., attorney for the Goldfield Consolidated, and formerly Assistant United States Attorney-General; Milton Dutch and P. S. Carney, mining lawyers of Nevada, and G. S. Arnold of Curtis H. Lindley's law office."

It might be added that Judge Lindley is one of the foremost mining law attorneys in the United States. His advice has probably been solicited in the matter.

The tremendous importance of the decision of the court in this matter is easily seen. As this magazine is already being printed and should be out at this date, we will give further particulars concerning this action in the next issue.

Government After Homesteading Oil Seekers

Two suits have been filed in the Federal District Court in Los Angeles at the instance of Attorney-General Wickersham, which mark the beginning of an effort by the Government to recover all mineral lands including those bearing oil, which have been claimed under homestead entries. As scores of homestead entries have been made on oil lands in this State, the titles of all similarly gotten lands are directly involved. The money value of the lands involved will run into the hundreds of millions. The defendants are George Svhwinn, an oil man of Coalinga, and Mattie A. Kearns, former postmistress at Huron, Cal. The homesteads they claim, covering 320 acres, are valued today at $320,000.

The Government alleges fraud and deceit in the patenting of these homesteads, and asks that the grants be declared null and void. If the ruling is in favor of the Government, proceedings, it is said, will be instituted against all other homesteaders whose entries cover lands that have been found to be oil bearing.

Other Cases

Suit has been filed against the Associated Oil Company and others by Frank G. Munzer, W. H. McKittrick and others for $50,000 damages and a penalty of $6000 per month for the time the company continues to operate an oil well on Section 24, 30-23. Complainants allege that the Associated entered upon the land without consent of the owners and against their protests and drilled an oil well.

Judgments have been recorded in the Kern County courts in favor of L. P. Sheffer against the Crown Oil Company for $469 and $136 costs, and the J. F. Lucey Oil Well Supply Company against the San Emedio Oil Company for $7,529.25 and $775.95 costs.

The case of Edmund Burke vs. Southern Pacific Railroad Co., in which title to several thousand acres of land granted to defendants is disputed, has been dropped from the calendar of the Superior Court of Fresno County by consent of both sides. Ten days' notice will be required to renew the suit. Mr. Burke had also asked that an injunction be granted restraining the K. T. & O. Oil Co., an auxiliary of the Southern Pacific, from trespassing or removing oil from the disputed property. Technicalities regarding plaintiff's rights will be gone over by his counsel before further steps are taken in the case.

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SUNSET-MIDWAY-McKITTRICK

Production for Month

The West Side fields made a slight gain in production over their June output in July. The total for the three fields, Sunset, Midway and McKittrick, for June, amounted to 2,584,003 barrels; for July, 2,697,680 barrels. Gain, 113,677 barrels. This last month's output also represents a gain of almost 68,000 barrels over that of May, which was close to 46,000 barrels greater than the June production. The new flowing wells are generally credited with being responsible for the increase. Among these was that of the Standard Oil Company, in the Buena Vista Hills. (See article, Standard Oil Developments).

Guaranty Pipe Line Company's Progress

We have received a letter from Mr. R. L. Cox, President and General Manager of the Guaranty Pipe Line Company, in reply to our request for information as to the company's progress. Mr. Cox has sent us considerable news showing that the Guaranty is a "going" concern, and we are very pleased to publish same. The Guaranty Pipe Line Company has opened an office in thecity of Ventura. This office will be maintained until the location of their pumping plant and tank farm is established. The survey of the pipel-ine route from Midway to the Coast is now almost completed. Rights of way for the line through the Cuyama Valley were gladly granted as property owners appreciate the great advantage it will be to them to have an oil highway from Midway to the sea. The expense to the company, Mr. Cox stated, was very small in comparison with what it might easily have been. During the early part of the coming month contracts will be let for trenching and team work. The company points to the continuous increase in the exports of California oil from San Francisco, and states its faith in a constant gain in the consumption of oil as time passes. Mentioning the harbor and port of San Pedro, the company states that 75 per cent of the production of the State is produced in Southern California, and it is less than half the distance from the great oil fields to San Pedro than to San Francisco. The necessity of taking care of the great export business will increase as the time approaches for the opening of the Panama canal.

The natural tendency would be to export from the nearest shipping point. The company has been having a steady sale of the guaranteed five year gold bonds bearing 8 per cent interest, both in California and the East. An interesting matter in connection with the probable earning capacity of the line was recently brought into view by the publication by the "Oil and Gas Journal" of the yearly earnings of various pipe-line companies the country over. The highest percentage of earnings shown is that of the Indiana Pipe Line Company, which totaled 251 per cent, others ranging from 24 per cent up, and this low earning being due to the fact that the two companies which earned it could not get enough oil. The history of the oil business in the United States all goes to show that the owners of the pipe-lines and refineries have been by far the most benefitted of those engaging in the trade. We trust to be able to give some good authoritative matter concerning the Guaranty, with illustrations of what has been done and exactly the route the line will follow, in an early issue of this magazine.

Honolulu Oil Company.

The report that the Honolulu's gasoline—from gas plant was almost completed, and about to be placed in operation, was not correct, as material for the plant has been delayed either in shipment or on its way to the fields, as explained to a representative of this magazine by Mr. Dierick in the San Francisco office. Dierick did say, however, that he had operated one of the compressors and had extracted gasoline from the gas produced by the big gasser and that there was not the least doubt that when the plant was completed and placed in operation, it would produce the goods. It is not expected that the plant will be operated for another sixty days. A ludicrous report was recently published in the San Francisco newspapers to the effect that the Honolulu was to sell its entire holdings to first, the Asiatic Petroleum Company, then the Standard Oil Company, for a stated price of $10,000,000. When interviewed, Capt. William Matson, president of the company, stated that the report was ten million miles from the truth. Captain Matson said that he would not take that amount for the properies as he had already expended more than $3,000,000 on them, and further, that he was not the owner of all the properties and that there were forty or fifty other persons beside himself interested in them.

Captain Matson is also declared to have stated, although with how much truth we are unable to say, that the Standard Oil Company wished his company's product for nothing, and that he was unwilling to sell for that price. Needless to say he doesn't need to do so. All the gasoline he can produce, it is generally said, he can sell in San Francisco direct. Captain Matson is president of the Chamber of Commerce of San Francisco.

The Honolulu has had fire trouble lately. They lost a rig and had Well No. 3, on Section 8, close to Taft, damaged. The drill in the well had struck a body of tar sand where a heavy gas pocket was encountered. The gas immediately took fire from a forge at the derrick, and in no time the rig was entirely destroyed. The loss was not great.

The Honolulu has filed an answer in the Superior Court to a complaint charging them with intimidation of the following persons, Jas. E. Stone, R. L. McCutcheon, J. P. McPhaul and J. E. Kiser, who were on the south half of Section 14, 32-24, Midway, until they were driven off by an armed force of men alleged to have been in the employ of the Honolulu Consolidated Oil Company. The latter denies that the lands under controversy were open to entry, and claims that they had a placer claim thereon. Other matters are [illegible] by a general denial made by Attorney George Whittaker for the company. N. B.—The Honolulu is alleged to have a new 20,000-barrel gusher near the big gas well.

Mascot Oil Company Makes Lower Contract

The report that the Mascot Oil Company has renewed its contract with the Standard Oil Company is stated to have been verified, but the exact figure at which the contract was renewed is not known. It is thought 35 cents per barrel is the price, although some persons have given it as 30 cents. The contract under which the company delivered oil until recently called for 50 cents per barrel, and under it the Mascot has paid as high as 4 per cent per month in dividends. It is thought that this new contract will reduce the dividends to approximately 2 per cent per month, but even 2 per cent is pretty high interest—24 per cent per year. The Mascot is located on famous "25 Hill," and has received great publicity. It is one of the "prettiest" properties from a development point of view, in the State. It is owned and controlled by Col. Timothy Spellacy and J. D. Thompson, of Los Angeles, and is being purchased by the California Consolidated Oil Company. Its production is now being held down to 60,000 barrels per month, but it is capable of producing 90,000 barrels per month, and has done so in the past. Forty producing wells have been drilled in, and here the company will rest, inasmuch as there is no need for further wells at the present time. Recently the company installed a number of new gas engines at a cost of $15,000, and other improvements have been made which will enable the company to reduce running expenses about one-half. The company is in a good condition. Col. Timothy Spellacy has told the editor of the "Derrick" that the Mascot's sands were very thick and would undoubtedly be producing when the gushers on the "flat"—down below the Mascot's property, on the level ground on which the town of Taft is located—had dropped into the "has-been" class from a high production point of view.

Maricopa Queen Closes with Standard Oil

The Maricopa Queen Oil Company, of which Mr. Thos. Wilhelm is manager, and which produces oil of a considerably higher gravity than the Mascot's, is reported by a number of publications to have closed a deal with the Standard Oil Company for 1, 000,000 barrels of crude at 45 cents per barrel, a contract good for $450,000. The Maricopa Queen has just recently brought in a fine well, No. 4, good for 2000 to 3000 barrels per day. This fourth well is much like the others; all of them have been good producers. The company is making a record for quick drilling. They seem to have struck a shallower territory than some of their neighbors, and get a good production in from thirty to forty days' time from starting the drill.

Canadian Pacific Oil Company Loses President

Word has been received in Taft that F. B. Springer, of Vancouver, B. C., president of the Canadian Pacific Oil Company, of Vancouver, Ltd., with properties near Midland, died in Paris, France, a short time since. Mr. Springer had a host of friends who regret his demise. He was well known in the whole Midway field. His death came as the result of an attack of appendicitis. Nobody has yet been elected to fill his place.

At present the Canadian is in charge of Superintendent Hudson. He states that the 19-inch casing has been landed in Well No. 2, at a depth of 700 feet. Drilling is about to be commenced on No. 3. No. 1 is producing 700 barrels daily. The company delivered approximately 15,000 barrels of 27 degree gravity oil to the Standard Oil Company during July, to be used for refining. The company receives 50 cents per barrel.

K. T. & O. Brings in Big Well

The Kern Trading & Oil Company has brought in a new well on Section 31, 12-23, in the Sunset District, not far from the Maricopa Queen which started out at 20,000 barrels a day, sanding up in a day. The well is 1650 feet deep, gravity between 24-25 degrees, Beaume. The well created a sensation when it came in. "Another Lakeview" was the first thought. The strike is considered very important, as the depth is comparatively shallow, the flow great, the gravity high; three very desirable considerations. The company now has a production in the Sunset-Midway field of about 20,000 barrels a day. They are running about thirty-five strings of tools, in all, in this neighborhood.

Wilkes-Hayden-Kergan Water Supply

The "Midway Driller" says that the Wilkes-Hayden-Kergan Company have commenced laying a 4-inch pipe from their property on Section 35, 32-23, into North Midway. This water line will soon be completed as rapid work is being done on it. It is built from Fellows, east and west from their property, and the lines will connect midway in the field. The company has two water wells that will produce 10,000 barrels per day; others soon to be drilled. There will undoubtedly be a demand for the water which will be used primarily for boilers, etc., and not for domestic purposes unless filtered. No pumping sub-stations will be necessary of construction as the water will gravitate to all parts of the field reached by the pipes. Several companies have already asked for contracts for large amounts of water, so no difficulty in finding a market is anticipated. The water business is good.

Western Water Company

This water company is now almost ready to begin to supply its patrons with the product of four wells, three of which are already drilled. Machinery, consisting of two 250-horse power, direct-drive, gas engines, which will use gas from the Midway field, is partly installed. An 8-inch pipe-line, nine miles long, will be laid from Taft to North Midway. The line will be a boon to North Midway operators who have had at times to shut down for lack of water. The company has had to care for itself in an injunction suit brought against it by Miller & Lux, Inc., to restrain it from taking water from three wells drilled on lands adjacent to Kern River and Buena Vista lake reservoir, the latter company alleging infringment on their riparian rights to the waters of the river.

American Oilfields Company ,'Jumps'' Belridge Lands

The American Oilfields Company, the great Doheney company which has had such a successful career, has ''jumped'' Sections 18, 28-22, and 6, 29-22, in the Belridge, or Belle Ridge field (spelled both ways), and is said to have held possession of these properties by armed force. The company is said to have located these lands some years ago, and to have abandoned them. Now that they have some value, because of the Belridge Oil Company's strike, they are being taken from bona fide locators. But government agents, it is reported, have been sent to take a hand and make a thorough report on the alleged methods of the big corporation.

Lakeview Aftermath—Union Won't Settle

The Lakeview Gusher has stirred up so much trouble in the California oil business that it is not at all surprising to see a suit in which it figures prominently, brought before the courts. The trouble now is that the owners of the land, by rights possessed of one-sixth the oil produced from same, have never received a cent for their royalty, which should amount to the value of one-sixth the oil produced, or close to the value of one and one-half million barrels of oil, figuring the production of the Lakeview at 9,000,000 barrels per date. Some figure the production at ten million barrels, some as low as eight millions. A fair figure is nine millions. The Union Oil Company controls the Lakeview Oil Company. They came into control because Messrs. Julius Fried, Parker, Barret, A. E. Hodgkinson and J. M. Dunn, who were in possession of sixty acres of fractional Section 30, had reached the end of their financial rope. The Union wished to locate the pumping station of the Producers Transportation Company on this land, their corporate child, and so an agreement was soon reached by which the Union came into possession of 51 per cent of the stock of the Lakeview Company, and the understanding prevailed that the drilling should be continued. The well was considerably deeper than 2000 feet when the Union gave instructions to the drillers to quit work. This did not strike the drillers right. They did not quit. The Union was interested in a pumping station; Fried, Dunn, Barrett and Hodgkinson, in a well. The well continued past the 2200 feet depth. The rest is history; the Lakeview Gusher, which upset the entire oil status quo in California, arrived. But the money for Fried, Barrett, Dunn and Hodgkinson, did not. And so the suit is on. And if they can get anything out of the Union, they're ''going some.''

Patents Recently Granted

The following recently granted patents of interest to the oil trade, are reported expressly for the ''California Derrick'' by J. M. Nesbit, Patent Attorney, Park Building, Pittsburg, Pa., from whom printed copies may be procured for 15 cents each:

Evaporator for petroleum oils or other liquids, M. J. Trumble, Los Angeles, Cal., assignor to Trumble Refining Co., same place, 996,736.
Rotary drilling rig, Cyrus Bell, Taft, Cal., 997,035.
Well casing, H. C. Hogarth, Tilsonburg, Ontario, Canada, 997,191.
Pump barrel, Clem Williams, Buffton, Ind., 997,351.
Pumping head, S. M. Fulton, Pomona, Cal., 997,445.
Rope socket, W. A. Campbell, Bakersfield, Cal., 997,488.
Under-reamer, J. C. Swan, Marietta, Ohio, 997,718.
Cup packer, C. A. Waitz, Rouseville, Pa., 997,721.
Under-reamer, A. G. Heggem, Pittsburg, and G. P. Ritter, Washington, D. C., 997,812.
Water dischagre attachment for deep well packers, G. F. Hovis, Clintonville, Pa., 997,915.
Pump for oil wells, Daniel Daniels, Los Angeles, Cal., 998,076.
Well mechanism, M. E. Layne, Houston, Tex., 998,186.
Well drilling device, J. T. Owen, Vega, Tex., 998,385.
Shut-off valve for oil and gas wells, W. A. Ruth, Avalon, Pa., 998,400.
Ratchet rope socket, F. J. Schweitzer, Fullerton, Cal., 998,641.

West Side Briefs

The Esperanza Oil Company, of which Captain John Barneson is in control, is said to have made a strike on Section 4, 27-21, Lost Hills, at a depth of 1100 feet. Further particulars lacking.

The Consolidated Midway is said to be engaged in dickering with ''English capital'' for their property in Midway. Same consists of 100 acres on Sections 30 and 32, 12-23. Price mentioned in connection with sale, $200,000. Income of property (estimated), $10,000 per month.

The Universal Oil Company, in which the Crocker family of San Francisco, is most largely interested, is the main property owner in Lost Hills. They have a strip nearly four miles long and two miles in width at its greatest point across, all declared proven territory. Their ''discovery well'' is making 200 barrels per day, pumped by a gas engine run by gas from the well itself. The company is rushing work, has three wells, big auto trucks, employ 100 men and forty horses, are constructing storage and have a splendid camp and water line.

E. C. Dieter and associates, of the Olig Crude, have leased eighty acres on Section 9, 28-20, west of the Belridge property, from the Canary Oil Company, of San Francisco. Captain John Barneson, F. V. Gordon, J. M. McLeod, W. D. Wilson and others have bought the southeast quarter of the same section and will proceed to develop the property.

The K. T. & O. Company is preparing to rush work at McKittrick, according to press dispatches.

The Daybreak Oil Company, a new corporation headed by J. B. Hedrick, J. M. Danziger and R. O'Brien, will shortly drill on property secured in the Midway field. Further particulars later.

Standard Oil Company has five gas wells on Section 26, 23-31, five miles north of Taft, one of them being the greatest in the State.

The State Conservation Board will prosecute the owners of gas wells who allow the gas to escape, according to a recent dispatch, which gives Lewis R. Glavis as authority for the statement. Glavis has sent out warnings to various oil companies in regard to this matter. We wish Lewis would take a look at some of the Midway gassers. It might open his eyes to a thing or two.

The Pyramid has press agented the oil papers to a standstill recently telling of the terriffic gas pressure found in its well on Section 18, 32-25, and of the big well possibilities in this section of the field. Further, that a campaign of development on its government tract of 1600 acres on the Midway-Maricopa flat, is to begin about September 1st. Let it begin! Let 'em bring in their big well. There's room for a lot of new ones yet.

LATEST QUOTATIONS ON THE SAN FRANCISCO STOCK AND OIL EXCHANGE

Following are the prices bid and asked for oil stocks listed on the San Francisco Stock Exchange. In spite of the widely disseminated talk about oil becoming lively, it is still far from normal; prices are low and sales light, although dividends continue and many stocks can be bought far below their actual worth. The shortness of the lists indicates how slack the interest is:

Producers.	Bid.	Asked.
Associated Oil Stock	$ 48.00	$48.25
Associated Bonds 5s	100.00	.....
Brookshire	.90	.....
Caribou	.90	1.00
Claremont	1.10	.....
Coalinga Mohawk	.70	.....
Coalinga National	.15	.18
Cons. Midway	.06	.....
Dominion	.95	1.10
Enos	.50	.57
Four	.12	.....
Maricopa National	.23	.....
Maricopa 36	.....	.....
Mecca	....	1.75
McKittrick	.10	.....
Midway Premier	.41	.43
New Penn. Petroleum	.48	.50
Occidental	.15	.....
Pacific States Petroleum	.25	.30
Palmer	1.25	1.27½
Palmer Union	.10	.....
Peerless	4.00	.....
Pinal	4.00	6.25
Premier	....	.65
S. W. & B.	.21	.22
Sterling	1.50	.....
Wolverine	.30	.....
W. K. Oil Co.	....	3.00

LOS ANGELES QUOTATIONS

Los Angeles exhibits considerably more interest in oil shares than does San Francisco, as evidenced by the following list:

Producers.	Bid.	Asked.
Amalgamated Oil	$ 45.00	$50.00
American Crude Oil Co.	.....	.63
American Pet. Co. (Com.)	42.00	43.50
Associated Oil	46.50	47.00
Bear Creek Oil & M. Co.	.....	.75
Brookshire Oil	.....	1.49
California Midway Oil Co.	.27⅝	.30½
Central	1.90½	.....
Coalinga Central Oil Co.	.....	.....
Columbia	1.06	1.15
Cons. Midway Oil Co.	.05¾	.06
Continental Oil	.....	.35
Enos Oil Co.	.....	.54
Euclid Oil Co.	.....	.53
Fullerton Oil	.....	4.40
Globe	.05	.08
Mexican Petroleum	.....	.....
Mexican Pet., Ltd. ''Pfd''	73.00	75.00
Mexican Pet., Ltd. ''Com''	36.87½	37.25
Mascot Oil Co.	.....	1.30
New Pennsylvania Pet. Co.	.48	.54
Olinda Land Co. (Oil)	.48	.54
Palmer Oil Co.	1.19	1.24
Rice Ranch Oil Co.	.45	.54
Section Six Oil Co.	.....	.10
Trader's Oil Co.	75.00	85.00
Union	101.62½	101.87½
Union Provident Co.	101.50	.....
United Petroleum	101.50	101.75
United Oil Co.	.60	.68
Western Union	89.50	100.00
Yellowstone Oil Co.	.....	.09
White Star Oil Co.	.20¼	.....
Non-Producers.		
Oleum Development Co.	.03¾	.04

News from this District Written by
W. D. MALTMAN

Palmer Oil Company

Palmer No. 1, the famous "Old Faithful" well of the Cat Canyon-Santa Maria field, is again producing oil, making 500 barrels per day on the pump. For awhile past the well was off production, due to sanding. With the resumption of production by the well a heavy gas pressure has been noticed. This is increasing steadily. Well No. 2 is being cleaned out. No. 3, while the tubing was pulled out, began to flow 250 barrels per day. No. 4 broke loose within the last two days before going to press, and produced at the rate of 2000 barrels per day, finally sanding. No. 5 has been perforated and is being put on the pump. The blockade of the Associated-Union pipe-line is being rapidly overcome and satisfactory deliveries are being made.

Palmer Union Oil Company

The operation of cleaning Well No. 1 is nearly completed; the well will be put on the pump in about a week. Good progress is being made with Well No. 2 which is down 2860 feet in a rich oil sand. No. 3 is likewise progressing satisfactorily, having just reached the main sand at 2800 feet. As soon as the drillers finish work on No. 1, No. 4 will be spudded in.

Rapid Work on Pacific Coast Railroad

Forty-three teams are at work on the extension of the Pacific Coast railroad, and they are entering the Palmer Union property, building towards the Palmer camp, where the loading station will be located. It is expected the road will be completed and in operation by the early part of October. Oil will then be shipped to the refinery at Hadley and to Port Harford for shipment in sea going vessels. The road is a "big thing" for the entire district.

Brooks Circulating System Successful

At last reports the Brooks Oil Company was making a success of their system of circulating hot water together with air. Production in the No. 2 well rapidly increased until its output is now 1000 barrels per day Well No. 1 has been converted into a water well. The company is marketing 500 barrels per day through their own pipe-line to the railroad station at Sisquoc, and from there shipping to their own refinery at Hadley.

Pinal-Dome Refinery

The Pinal-Dome refinery, located east and north of Betteravia, is now in operation and working to perfection. The product of the plant is said to be superior to any other on the market, and the efficiency of the gasoline far greater than the ordinary gasoline offered in the market. A market for the entire output of the plant is said to have been secured already. The plant was installed under the direct supervision of the Consulting Scientific Editor of this magazine, Mr. Paul W. Purtzman, of the firm of J. P. Prutzman & Son, petroleum engineers, Berkeley, Cal. According to the Santa Maria "Graphic," the capacity of the works at present is about 200 barrels of refined gasoline per day, and the plant is so arranged that it can be added to indefinitely. The company has 125,000 barrels of storage on the property, and will have 200,000 barrels when a new 75,000-barrel reservoir is completed. The present plant consists of four stills, two cooling boxes, an asphalt reduction still, and the engine and steam plant. The "Derrick" will probably have a scientific article on refining in the early future.

Princess Oil Company, on the Ontiveros tract, in the Tepusquet, is awaiting a cement job on its 10-inch casing which was landed at 1800 feet, shutting off the upper water. The formation has given every indication of an early encounter of oil-bearing strata, as a heavy gas pressure was developed several hundred feet back, and the blue shale penetrated has a similar appearance to that of the Cat Canyon producers. On the Muscio the Princess is making good headway with its 6-inch casing, having drilled into the oil sands, and is counting on finishing the wel up for a test within a short time. This well is in a very promising territory as the strike on the Dome nearby indicates.

Santa Maria Enterprise Oil Company has drilled through 70 feet of highly saturated oil sand on its property in Cat Canyon with 4½-inch casing, and from all indications is in condition to pump a good stream of oil from this formation. A good gas pressure accompanies the oil sand and it is thought the well will develop into a flow after it has been thoroughly cleaned out. This well is on the property adjoining Brooks No. 2, and shows similar formation conditions.

Santa Maria Oil and Pipe Line Company is down 1540 feet with its second well on the former Henderson Oil Company's property in Cat Canyon. The 10-inch casing was landed and the upper water cemented off at this depth prior to putting in smaller pipe. The well has gone down rapidly and should soon be to a producing depth. On the Alexander, Tract No. 1 has not been completed.

Gato Ridge Oil Company is drilling its Henderson No. 1 at the depth of 1400 feet with 10-inch casing in blue shale. The formation is very promising at this early depth. Bell No. 1, of the same company, on the north end of the John Bell property in Cat Canyon, is getting through the surface sands in good shape and soon will have shale drilling.

West Oil Company, adjoining the New Pennsylvania Petroleum Company in Cat Canyon, has finished up its first well at 2900 feet in a thick strata of oil sand, and is now pumping 300 barrels of good quality oil from this depth. The well is comparitively shallow for this district, and proves the advisability of finishing up in the early sands as the company failed to get a production from this well at 3400 feet to which it was originally drilled. The pipe collapsed at 2300 feet and necessitated re-drilling.

Associated Oil Company, on the Williams tract, is drilling No. 3 at a depth of 500 feet. The hole is 12½-inch, and seems to be through the surface sand troubles.

Dispatch Oil Company, in the eastern field, is down 3000 feet with 6-inch casing in brown shale. The first oil showings have been encountered and the management anticipates finishing up in a producing sand prior to 3200 feet.

The Ideal Oil Company was delayed by a pinched shoe at 2900 feet, and had to pull its 6-inch casing, but this fault was remedied and it is now drilling at 2930 feet, making rapid hole. This well is close to, and similar to the Dispatch.

New Pennsylvania Petroleum Company has its hole in Cat Canyon progressing in good shape after a second collapse in the light 8-inch pipe. This has been overcome by putting in 6-inch, and the hole will be cleaned out to a depth of 3000 feet, lined with the heavy 6-inch pipe, and a test made from that depth. The success of the West using this method assures the New Pennsylvania of a production from the shallower depth than the hole was formerly drilled to.

Summit Oil Company, on the Witzen tract, at the northern end of the Eastern field, is nearing bottom after having been forced to drill out a string of casing 500 feet long. The well is on the northern edge of the field, and has been the center of attraction as a prospector, and will extend the territory several miles if the indications, not predominant, prove correct.

Carpenteria Oil Company is preparing to finish its well in Cat Canyon at the depth of 3100 feet with 6-inch casing. A good oil strata was encountered and a test will be made of this.

Santa Maria Midway Oil Company, in the Tepusquet, is down 2000 feet with 10-inch, and is now getting ready to land this pipe and cement off the upper water. This hole is in perfect shape and the formations shows a quanity of gas and oil seepage indicating the possibility of a shallow well

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Recent Oil Company Incorporations

Livermore-Boston Oil Company, Coalinga; incorporated August 19; capital, $500,000; directors, Leo. F. Fitzgerald, Robt. McGlashan, W. T. Zimmer, D. F. Colleweih and E. B. Farley, all of Coalinga.

Ninteen Eleven Oil Company, Phoenix, Arizona; articles filed August 19; capital, $200,000; directors, J. R. Hartzell, Jos. Chadbourne, Jas A. Keys, C. J. Niklaus and R. F. Hunnewell.

Premier Antioch Oil Company, Antioch, Cal.; incorporated August 19; capital, $200,000; directors, S. B. Reynolds, W. E. Hicks, of Oakland, and W. J. Cochran, of Antioch.

Nina Oil Company, Bakersfield; incorporated August 14, 1911; capital, $100,000; directors, E. T. Lutz, T. N. Harvey, I. Ikenberg, Henry Gill and D. J. Gonyer, all of Bakersfield.

Napa Valley Oil Company, San Francisco; incorporated August 16; capital, $500,000; directors, Jonh Donnellan, Rufus C. Thayer and Chas. J. Parks, all of San Francisco.

Pleasant Valley Oil Company, Coalinga; incorporated August 16; capital, $15,000; directors, T. J. Crumpton, J. M. Bateman, S. J. Hardison, F. A. Wells and I. N. Conkey, all of Coalinga.

Pacific Oil Lands Company, San Francisco; incorporated August 17; capital, $1,000,000; directors, Walter S. Brann and Esther Harris, of Fruitvale, Harold H. Maundrell, of San Francisco.

Castro Land and Oil Company, San Francisco; incorporated August 18; capital $40,000; directors. D. Driscoll and Wm. P. Glynn of Menlo Park; L. G. Ecklon, Chas. Enkle, Peter P. Flood, P. J. McCormick, Jas. V. Gleason of San Francisco; R. P. Kavanaugh of Palo Alto, Elmer E. Smith of Merced.

Tower Oil and Development Company, San Jose; incorporated August 18, capital $25,000; directors, Walter Blodgett, Gabriel Loeb, Jos. Waterman, H. C. Pfister, all of San Jose, and Jos. Eado, Jr., of Kings City, California.

Mutual Oil Land Company, Los Angeles; incoruorated August 18, capital $10,000; directors, M. Morgan, S. R. Brough, W. L. Cooper, T. M. Hartley of Los Angeles and E. L. Booth of Fillmore, California.

Coronation Oil Company, Limited, Vancouver, B. C., articles filed August 8, 1911; capital $850,000; directors, Bobt. C. Bidlake, Elma Keesvatin, Harold V. Pearlman, Chas. Henry Hubbell and John Edward Ardell, all of Vancouver, B. C.

Pinal-Dome Refining Company, Santa Maria; incorporated August 12, 1911; capital $200,000; directors, Geo. P. Merritt, J. F. Goodwin, R. E Easton, M. A. Kerr, all of Santa Maria and M. Fleisher of San Francisco.

UNION TOOL COMPANY

Manufacturers of Up-to-Date

Oil Well Drilling
and
Fishing Tools

FACTORIES

Los Angeles, Cal. West Chicago, Ill.

BRANCHES

Moron, Cal. Coalinga, Cal. Orcutt, Cal.

Assessments

The following companies have assessed their outstanding stock:

Blair Oil Company, Coalinga, 3 cents per share; delinquent September 21st; sale date, October 12th.

Luxor Oil Company, San Francisco, 2 cents per share; delinquent September 11th; sale date, October 2nd.

Madison Oil Company, San Francisco, 5 cents per share; delinquent September 20th; sale date, October 18th.

Midway Union Oil Company, Phoenix, Arizona; 87 100 cent per share; delinquent September 5th; sale date, September 25th.

Midway Provident Oil Company, Los Angeles, 3 cents per share; delinquent September 18th; sale date, October 16th.

Newman-Morris Oil and Land Company, Oakland, Cal., 3 cents per share; delinquent August 25th; sale date, September 10th.

Pilot Oil Company, Coalinga ,5 cents per share; delinquent September 8th; sale date, September 29th.

Sunshine Oil Company, Bakersfield, 10 cents per share delinquent August 12th; sale date, September 1st.

Other companies that have recently assessed are: Coalinga-Monterey Oil Co.; Bohemian Oil Co.; Coalinga Unity Oil Co.; P. & C. Oil Co.; Best Yet Oil Co.; Valley Oil Co.; Coalinga Hub Oil Co.; Pluto Oil Co.; Palvadero Oil Co.; Walker Oil Co.; Ventura Oil Development Co.

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Illustrations for A. S. Cooper's New Treatise "Secondary Distillation in Nature."

Figure 1

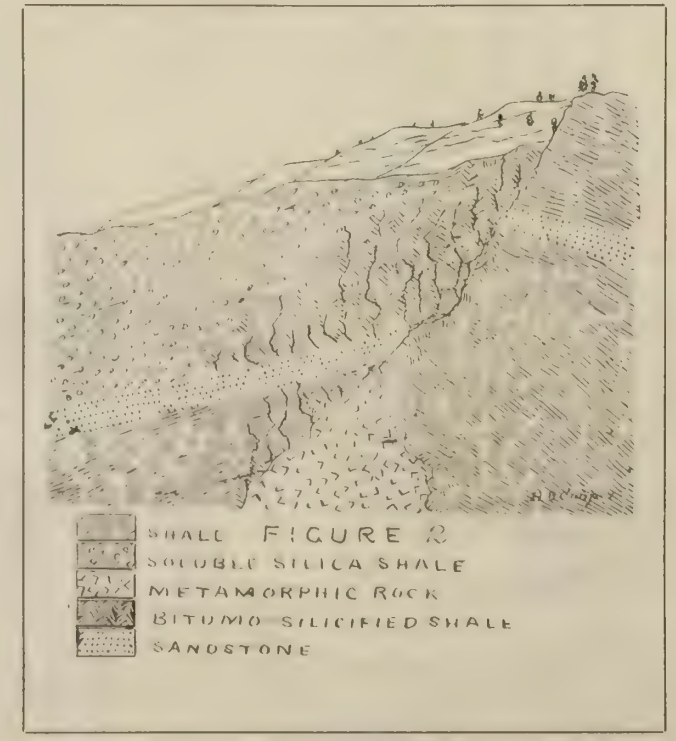

FIGURE 2

Figure 2

CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 4 SAN FRANCISCO, CAL., OCTOBER, 1911. No. ~~3~~ 4

Secondary Distillation in Nature

The Origin of Petroleum Oil and Natural Gas

By A. S. COOPER, E. M., Ex-State Mineralogist of California; Contributing Scientific Editor of the California Derrick

Petroleum Oil and Natural Gas Result of Distillation

Petroleum oil and natural gas are the results of the distillation of carbonaceous matter—(primary distillation)—and the distillation and repeated distillation of bituminous matter—(secondary distillation)—by the heat of igneous and metamorphic rocks. This paper will be devoted to the consideration of secondary distillation, that is, the distillation of bituminous matter. There are certain rocks and geological conditions in California that point to the fact that after petroleum oil accumulated in these rocks it was distilled, producing natural gas and petroleum distillates and leaving a residue of asphaltum. Many existing conditions tend to prove that this distillation is still going on.

Movement of Gases and Distillates

During the distillation of bituminous matter the gases and distillates ascended in the form of gases and vapors through fissures, cracks and faults made by orographic movements. The vapors of the distillates condensed in, and were stored in, cooler strata; and if water was present the distillates ascended by their inferior gravity through the associated water, and accumulated in porous and seamed strata, or reached the surface, forming seepages or beds of asphaltum.

The natural gas, while ascending, if it came in contact with oil or water, entered into solution with them. After these fluids became saturated the gas accumulated above the surface of the water, or by different avenues escaped to the surface and was lost in the atmosphere.

The shales in which secondary distillation has taken place are, on account of having been bituminized and silicified, called bitumo-silicified shales.

Bitumo-Silicified Shales

These shales were deposited beneath the sea, as is shown by marine fossils in the underlying and adjoining formations. So far no calcareous fossils have been found in these shales, probably having been removed by percolating waters and obliterated by pressure and earth movements.

These shales have been bituminized, then silicified, by hot siliceous waters. They were bituminized, crumpled and bent before they were silicified; otherwise they would have been broken into many fragments by the force which bent them. The bitumen must have entered these shales in a very liquid state in order to have impregnated such fine-grained shales. The laminae of these shales are rendered very distinct by the bituminization of some of the laminae and the lesser bituminization or the absence of bitumen in others. The extent of the bituminization of the different laminae depended upon the different degrees of porosity before bituminization and silification.

Figure 1 and Discussion of Bitumo-Silicified Shales

Figure 1 shows a piece of bitumo-silicified shale. A fault passes through the center of the shale. The black stripes contain about three per cent of bitumen. The bitumo-silicified parts of these shales are frequently hard enough to scratch quartz and nearly all of them will scratch glass. When heated in an open tube they give a strong bituminous odor and yield distillates of petroleum oil, which condenses on the side of the tube. When two pieces are sharply struck or rubbed together they give an asphaltic odor. The bitumen in this part of the shales cannot be extracted by solvents.

The coloring matter of numerous black and dark colored rocks has been attributed to carbonaceous matter when, in reality, their color is due to bituminous matter. These shales are of a hydro-thermal origin and are not igneous as is claimed by some geologists. This is shown by their being stratafied, bituminized and frequently containing water-formed crystals. One archeologist mistakenly claimed that the black arrow heads made by the Indians from these shales were obsidian.

Location of Bitumo-Silicified Shales

These shales are shown in bluffs in a number of places exposing a thick bed of several hundred feet. Wells have been drilled in the bitumo-silicified shales to a depth of 1500 feet without passing through them, while in other places they have been proven to be only a few hundred feet in thickness.

Overlying these shales are soluble silica shales. On account of containing about 5 per cent of diatom fustules these soluble silica shales have been called diatomaceous shales and are said to be a particular part of the Miocene, which has been called the Monterey. These soluble silica shales will be more fully described hereafter.

Numerous sulphur springs occur in these bitumo-silicified shales. Wells drilled in them to a depth of over one thousand feet have struck hot alkaline and sulphur water, having in some instances a temperature of 130 F.

The bitumo-silicified shales are found near faults and fissures through which hot alkaline waters could ascend, likewise on one side of an anticline or other structure towards which the waters from fissures would flow, but not on the other side.

When covered, the covering consists of soluble silica shales, also called diatomaceous or Monterey shales.

Figure 2. A Cross Section Through a Faulted and Fissured Anticline

Figure 2 shows a cross section through a faulted and fissured anticline. The bitumo-silicified and soluble silica shales are found on the dip of the anticline towards which the hot alkaline solution rises through the fissures from metamorphic rocks, while on the opposite side ordinary shales exist. This position of theshales is often found in the Coast Ranges of California. Pieces, seams and pockets of asphaltum are found in them completely enclosed by bitumo-silicified shales, showing that they were silicified after bituminization. Sometimes this asphaltum is brittle and shining and at other times tacky. This asphaltum is the residue of petroleum oil after the distillation of its volatile parts by hot silicious waters.

Brittle asphaltum is found occupying part of a seam, the remainder of the seam being filled with a mat of small quartz crystals. As small quartz crystals are not deposited from a silicious solution below a temperature of 180 degrees C., this must have existed when the quartz crystals were deposited. A temperature of 180 degrees C. would distill all the volatile parts of petroleum oil present, leaving nothing but asphaltum.

Silica, when deposited at low temperature or above ground, from alkaline solutions, forms a white amorphous and hydrated substance, and rarely crystallizes or possesses crystalline properties, whereas at depths, under heat and pressure, it becomes crystalline and crystallizes.

At the surface the boiling point of water is 212 degrees F., but the pressure of a column of water raises the boiling point so that at a depth of 1500 feet below the surface the boiling point is 356 degrees F., a temperature at which quartz is deposited from its solution with water. Above 1500 feet the boiling point gradually decreases until the surface is reached; therefore, the temperature becomes so low that the dissolved silica deposits as an amorphous mass or soluble silica shales. The boiling point of water is raised by the presence of silica in solution with the water.

Chalcedonic silica is directly deposited in the bitumo-silicified shales from hot siliceous waters; the separation of silica from its solution being accompanied by cooling and decrease of pressure. Silicification of rocks seemingly takes place rapidly when the openings in the rocks are capillary or sub-capillary. When the openings are greater than capillary silification takes place very slowly or not at all.

Results of Distillation Above and Beneath the Surface

If crude oil be kept at a temperature of 180 degrees C. by means of a sand bath until it no longer loses by weight, the volatile parts of the oil and the petroleum will be evaporated or distilled, leaving a black, shining, frangible combination of asphaltene and crockerite. It is possible that even at a much lower temperature the same result will be accomplished if the heat is applied for a long period of time.

It is well known that super-heated steam is employed in the fractional distillation of petroleum oil. Hydrothermal distillation has taken place in the bitumo-silicified shales removing the lighter parts of the petroleum oil until nothing but asphaltum remains. This asphaltum generally has the consistency of what is known in the trade as D. B. C. grade, although in exceptional places the E. G. & L. grades are found.

If sufficient heat was present to effect fractional distillation in these shales, it is fair to assume that at greater depths there was sufficient heat to effect the destructive distillation of carbonaceous matter producing the bitumens. That this is so will be shown in a future paper.

During the fractional distillation of the bitumen in the bitumo-silicified shales, vast volumes of natural gas were produced; also light hydro-carbons. That gas and light hydro carbons are still being produced in this manner is indicated by the abnormal heat of some springs and waters encountered in drilled wells and also by the constant escape of sulphureted and carbureted gas carrying light hydro-carbons on the surface.

(To be Continued)

Increased Use of Oil on Railroads

(From U. S. Geological Survey Bulletin)

An interesting feature shown in the report on petroleum for 1910, by the United States Geological Survey, now in preparation, is the statement of the extent to which oil enters into railroad transportation. The total length of railroad line operated by the use of fuel oil in 1910 was 21,075 miles, a trackage equivalent to that of practically five transcontinental lines stretching across the United States from ocean to ocean. Some of the lines that use oil, however, also use coal. The number of barrels of fuel oil—of 42 gallons each—consumed by the railroads of the country in 1910 is stated to have been 24,526,883. This includes 768,762 barrels used by the railroads as fuel otherwise than in locomotives. The total number of miles run by oil-burning engines in 1910 was 88,318,947. This would have carried one engine or train around the world approximately 3,530 times.

Oregon Loses Coal Trade

(From U. S. Geological Survey Bulletin)

The coal mining industry of Oregon, according to Mr. Parker, is suffering from the great increase in the production of petroleum in California and its use as fuel, for domestic needs as well as for railroads and for manufacturing. The production of coal in Oregon decreased from 87,276 snort tons in 1909 to 63,241 tons in 1910, a loss of 24,035 tons, or 27.54 per cent. The value decreased $10,966, or 4.66 per cent., from $235,085 in 1909 to $224,119 in 1910. Only two mines, the Newport and the Beaver Hill, both in Coos Conuty, ship coal in large quantity, the shipments beingmade almost entirely by sea to San Francisco.

U. S. Department of Agriculture Treatise

The United States Department of Agriculture, in its Bulletin No. 38, has issued a very valuable pamphlet entitled, "Methods for the Examination of Bituminous Road Materials," by Prevost Hubbard and Chas. S. Reeve, head and assistant chemists, respectively, of the office of public roads. The treatise in its scope takes in the classification of bituminous road materials; scheme of examination; specific gravity and specific viscosity determinations; float and penetration tests; melting, flash and burning point determinations; volatilization and distillation tests; determination of bitumen soluble in carbon disulphide, same determination insoluble in naptha and carbon tetrachloride; determination of fixed carbon and paraffin scale; extraction of bituminous aggregates; grading the mineral aggregate and determination of voids in the mineral aggregate. Further than this laboratory equipment, metric conversion tables, comparison of degrees Beaume and specific gravity and comparison of Centigrade and Fahrenheit degrees as well as forms for reporting tests are all given in the appendix. This is a very valuable publication, especially at this time, when road construction from California bituminous materials is occupying so large a part in the discussions of the day, and it may be that the "Derrick" will run the treatise if enough interest is shown to demand it.

California Production for and Field Operations During August, 1911

The combined production of all the oil fields of California for the month of August was increased 271,122 barrels of oil. The output, as shown in the table below, totaled 7,208,984 barrels; July's production having been 6,937,862 barrels. (See August California Derrick).

Consumption shot up half a million barrels and more; to be exact, it rose from 5,897,048 barrels to 6,406,115 barrels, a total gain of 509,067 barrels for the month.

The average daily production of 232,546 barrels during August was an increase over July's daily production, 223,802 barrels, or 8744 barrels.

Average daily consumption, 206,648 barrels during last month, shows an average daily increase hardly less than double the daily production increase; that is, daily consumption increased 16,421 barrels; daily production 8744 barrels; daily gain in consumption, over production, 7677 barrels. This will be most encouraging to a majority of operators, but it is to be hoped that there will be no renewal of strenuous activity.

Total amount of oil in storage, August 31, is close to the "forty million mark," being shown as 39,837,101 barrels.

During August 73 wells were completed, 4997 were producing, 588 were drilling and 15 were abandoned. No less than 66 new rigs were completed, showing that activity is not greatly diminished.

Following is our regular detailed monthly statement, giving production, rigs completed, wells drilling, producing and completed during the month in every separate field, as well as the county in which the field is located:

	County	Rigs Comp.	Drilling	Producing	Completed	Abandoned	Prod. for Month
Kern River	Kern	7	5	1,606	12	1	1,172,575
McKittrick	Kern	4	14	183	4	...	485,887
Midway	Kern	28	204	481	23	3	1,957,396
Sunset	Kern	2	37	216	13	1	479,756
Coalinga	Fresno	8	116	724	14	5	1,583,884
Watsonville	Santa Clara	....	.....	5	...	.	3,720
Arroyo Grande	San Luis Obispo	....	2	2		1	1,000
Lompoc	Santa Brabara	.	4	21	....	..	68,400
Santa Maria	Santa Barbara	4	44	157	1	2	460,938
Summerland	Santa Barbara	...	.....	130	...	....	6,475
Santa Paula	Ventura	2	41	267	1	. .	48,366
Newhall	Los Angeles	....	3	78	..	.	12,020
Salt Lake	Los Angeles	3	9	258	2	2	216,349
Los Angeles	Los Angeles	...	.....	415	...	..	37,142
Whittier-Coyote	Los Angeles	2	23	140	1	.	81,561
Puente	Los Angeles	. ..	.... .	56	...	.	2,60.
Fullerton - Brea Canon	Orange	.	45	256	2		562,96.
Lost Hills	Kern	6	18	2	....	.	27,900
Salinas Valley	San Benito and Monterey	....	2	....	.	.	..... .
Repetto	Los Angeles	....	.....	.....	....	....	.....
	Totals	66	588	4,997	73	15	7,208,984

Summary

	Barrels.
Stocks, July 31, 1911	39,034,282
Production, August, 1911	7,208,934
	46,243,216
Consumption, August, 1911	6,406,115
Stocks, August 31, 1911	39,837,101
Average daily production	232,546
Average daily consumption	206,648
Average daily surplus	25,898

Comparison of July and August Exports from San Francisco

With the figures of July's exports of all kinds of oil from San Francisco totaling in excess of nineteen and one-half millions of gallons (19,505,878) August shipments fell to 7,808,164 gallons, due to small shipments of crude and to the fact that no residuum was exported. The showing of consumption during themonth is, therefore, all the more remarkable, inasmuch as it demonstrates the capability of the home market to absorb considerably more oil than has been the case during the summer months. Following is a table showing July and August exports and valuations:

	July.		August.	
	Gallons.	Dollars.	Gallons.	Dollars.
Crude	6,132,000	$ 86,600	1,890,220	$ 27,016
Napthas	330	35	19,296	3,371
Illuminating	11,405,349	373,837	5,826,013	190,613
Lubricating & Paraffin	26,670	6,224	72,625	17,303
Residuum	1,941,529	28,052	.....	... .
Totals	19,505,878	$494,748	7,808,164	$238,303

It might be added that September will probably show a large increase in shipments over those for August.

Total exports from the United States during August (all classes and grades of oils) amounted to 147,518,931 gallons valued at $9,074,549. For the eight months ending August 31st, total exports and values from United States were: 1,091,017,607 gallons valued at $65,623,057. For the corresponding eight months last year the exports were: 930,883,254 gallons valued at $60,016,376, representing a gain in oils exported amounting to 160,134,353 gallons valued at $5,606,671, which displays a decidedly healthy condition for this season.

Dividends

A full list of all dividends paid during July, August and September by companies listed on the San Francisco and Los Angeles Stock Exchanges will be given in the next issue of this magazine when the regular quarterly oil company dividend statement compiled by the San Francisco Stock Exchange will be published.

Big Figures

W. W. Orcutt, geologist for the Union Oil Company, has made a statement that it is quite unlikely the oil production of California will go below 75,000,000 barrels per year from now on; perhaps for as long as fifty years. It, (this statement), is not only one of a mighty big production, but it is a mighty big prediction. Four billion barrels is "some oil." But in all probability no one will be able to tax Mr. Orcutt with the statement fifty years hence.

CALIFORNIA DERRICK

The Oil Authority of the Pacific Coast

Published Monthly

CHARLES C. WRIGHT. - - - - - - - - - - Editor and Publisher
PAUL W. PRUTZMAN. - - - - - - - - - Consulting Scientific Editor
A. S. COOPER. - - - - - - - - - - Contributing Scientific Editor

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Hon. A. S .Cooper, Contributing Scientific Editor of the "California Derrick."

Honorable A. S. Cooper, State Mineralogist of California from 1897 to 1901, and one of the foremost geologists California ever has known, is now affiliated with the "California Derrick" as Contributing Scientific Editor, a position which he is well able to fill—and several times over, as Professor Cooper's friends are doubtless aware.

For some time past Mr. Cooper has been writing for this magazine articles of the greatest value and interest, remarkable for their lucidity, their grasp of subject matter, and the easy, flowing style of the author, never stinted, never at a loss concerning his subject, yet so plainly written as to be enjoyed by all.

During the last few years new stars in the geological firmament of California have arisen and shone with considerable brilliancy; but, in all truth it can be said, not one of the famous geologists of this State is better acquainted with the geological conditions from one end of California to the other than is Mr. Cooper.

It is a treat to present the writings of a man so familiar with his subject as is Contributing Editor Cooper, to the intelligent readers of this magazine. From the number of letters we have received speaking in terms of praise and great interest in, Mr. Cooper's articles, we know that they are appreciated, and, secure in the feeling that our readers will have interesting matter from his pen in the future, we feel that we are giving them something which has never been equalled by any petroleum magazine, when our other brilliant writers are taken into consideration.

Mr. Cooper has specialized in the hydrocarbons, as anyone reading his interesting treatises cannot fail to be aware. In this issue he begins one of the most interesting articles which he has yet written for this magazine. While the last article from his pen, "Uplifts and Subsidences" was a very valuable technical paper, indicating where oil may be discovered in this State (and elsewhere), and embodying theories which the writer supported most ably with an array of valuable facts; still, the present treatise, with which this issue of the "Derrick" opens, is bound to attract a great deal of attention, and to create interest of no little proportions. We recommend that it be followed most carefully; for while Mr. Cooper has been anticipated in his subject matter in this magazine (partially) by Mr. Prutzman and Mr. Plotts, all writings by persons of recognized ability deserve and doubtless get the most careful attention when devoted to the origin of petroleum.

If our readers will not object we will here give ourselves a small "pat on the back" so to speak, and call their attention to the fact that the "California Derrick" has run more original technical matter by famous Californians on petroleum and its products than any other five oil journals in this State combined. For this we believe we deserve to continue to receive the generous support which we have had this past year—in ever increasing measure.

Better Times Ahead

With the mailing of checks to members of the Independent Oil Producers Agency totaling $442,000.00, representing the returns on the sale of 1,300,000 barrels sold at 34 cents per barrel during the month of August, the member of that organization who judges conditions from returns received monthly, congratulates himself with the thought that perhaps times are not as bad as they might be—in fact that they are vastly better than he had any right to presume, considering the manner in which the Agency "dope" has been handled in the columns of the press.

For the increase in the sales by 200,000 barrels in August over the month of July, and the disbursement of the $442,000, is by no means in accord with the melancholy outlook given in numerous publications. Even this news, temporary as may seem is importance to the man who looks into the future, is by no means the best news which is part of the Agency's brightened outlook: For while production increased but 2 per cent. during the second quarter of this year over last year's second quarter, consumption increased 12 per cent. over that of last year during the same period, or a gain of 10 per cent. for consumption-gain against production-gain.

The consumption of August, 1911, was greater than that of the same month last year by approximately 13.7 per cent.

Now when it be taken into consideration that of the August consumption of 6,400,000 (and odd) barrels, 1,300,000 barrels was sold by the Independent Oil Producers Agency at an increased price, it looks as though the atmosyhere is brightening.

Oil is very cheap now. All the great companies are busy storing it. The Fields are capable of a great increase in production but, no one knows when something may happen to spoil that production. Water has ruined an entire field in Galicia. Water is stated to be breaking into and ruining a part of the Sunset field at the present time. Eastern and mid-continent production is on the decline; mid-continent oil has just experienced another raise, bringing the price at the well to 50 cents per barrel. Other countries which are constantly hailed as being the greatest oil fields in the world do not materalize. Only Mexico looms up huge at present; and the Dos Bocas, which turned into a great salt lake, if it furnishes anything to go by, would indicate that Mexico may possibly be not as desirable from an investment and development view point as one might easily imagine. It may be a treacherous field.

Oil is **not** to be found the globe over in commercial quantities, despite all the glad reports of those who would boom their home district or would lessen the value of the other districts' product. We have an over-production in this State for present needs, it is true; but the consumption is steadily increasing, and it must be apparent that storage, at its present high cost, would **not** be so attractive to the great marketers if they were absolutely sure of extracting the oil from the ground at its present prices for an indefinite time in the future. In other words, the future promises a steadily increasing consumption growth which will in no great length of time wipe off the lead of production over consumption and which may, possibly, cause the withdrawal of oil from stocks inside the next two years. Predictions are by no means to be indulged in with any degree of correctness to be hoped for in the oil business, but—the future **is** promising.

Agency Versus Trouble

The Independent Oil Producers Agency, which is today the controlling factor in the oil industry of California, has probably passed through the period of crises which it has had to face with the tremendous problems upon its hands for solution. The Agency, versus Trouble, is the winner. That this is so is proven by the price of oil today; not less than 30 cents anywhere in the State for any grade of oil; 34 cents for Agency members with a prospective increase in price in the future.

There is no possible room for doubt that, without the combination of their forces, the various oil companies comprising the Independent Agency would be receiving less money than they now are; possibly the average price under no-Agency domination of the market would have fallen, under the great surplus production, as low as 20 cents per barrel. Thus, although altruistic to a large measure, the efforts of the Agency have benefitted themselves much more than had no efforts been made; and that they **are** altruistic, in that they aid the outside producer in obtaining a half-decent price for his oil, should by no means be held against the combination. The general prices prove the Agency's power.

It is only to be expected that with a directorate of over one hundred and fifty members opposition to almost every plan proposed should develop. It almost invariably does develop. But the personal desires of the very few are usually overcome by the common sense of the majority, and a fair solution of each problem is usually arrived at. In the matter of reducing the directorate to seventy-five members much common sense is shown by those in favor of the measure, inasmuch as this move will facilitate action on the part of the Board, which is now of unwieldy proportions. Further than this, it is not always possible for a quorum of this board, let alone the entire board, to gather at the meetings at which absolutely necessary matters must come up for transaction. Think of the divergent interests to keep members from attending every meeting!

In view of the fact that Mr. St. Clair, President of the Agency, has stated that the Agency has contracts covering the delivery of 60,000,000 barrels of oil, over a number of years to come, it would appear to be only the part of wisdom to erect ample storage, endorsing in full the storage plan proposed by the Executive Committee, in order to save every cent possible and to insure delivery, just as the other great marketing factors in the State have done. The Agency cannot be run on haphazard lines. Its interests are too great to allow of even the smallest leak; pennies grow into thousands of dollars. Centralization of power is a necessity to guarantee quick action; and, as has been pointed out, centralization of power means centralization of responsiblity, reduction of expenses and general additional efficiency in marketing. **Organization** is nine tenths of success. It is thought that at the meeting to be held September 29th, ratification both of the storage plan and the reduction of the number of members comprising the Board will be consummated. Twenty million barrels of storage room is desired, to erect which bonds will be issued, secured or guaranteed by the Agency companies.

Thus far the Agency has done very well and we look forward with eagerness to the developments of the coming meeting.

"Thirty Cent Oil"

The following item appeared in the Midway Driller. The Mr. Gillett mentioned is E. D. Gillett, one of the oldest operators in the Midway field. His views are well worth attention, although no producer likes the idea of thirty-cent oil for an indefinite time.—Editor

"Can oil be produced at 30 cents a barrel?" To this query Mr. Gillett said, "Yes, and at a fair margin of profit. Why, in the Kern river field, I remember when we produced oil at 15 cents a barrel and 'broke even.' Today we have better facilities for producing oil much cheaper than then. Better tools for drilling, better supply houses, cheaper gas, better transportation facilities, more skilled workmen, cheaper power (electricity) for pumping and drilling, and last, but far from the least, we know the territory. It is true many will not agree with me when I say that oil can be produced for 30 cents a barrel, nor can it be when high-salaried superintendents in high-priced autos spend their time in pleasure seeking and leave the work in the hands of their subordinates But by stopping such leaks and getting down to an economical basas oil can be produced at 30 cents and even less at a fair profit."

DEATH OF JOHN EATON

On September 16th last, John Eaton, President of the Oil Well Supplying Company, passed away. Mr. Eaton's death was almost entirely unexpected. It came as a great blow to his numerous friends and associates, who may truthfully be said to live the oil world over, as Mr. Eaton's operations extended almost to every oil region of importance.

A brief sketch of Mr. Eaton's active life will doubtless be of great interest to our readers. Mr. Eaton's career as an oil man, engaged in the supply business, can be said to have begun in reality when he went into business for himself, in 1867, in Pennsylvania. It ends September 16, 1911. Previous to the time of his going into business for himself he was in the employ of the Boston Tube Company. It was not long before Mr. Eaton associated himself with a Mr. Cole, under the firm-name of Eaton & Cole, their store being on Elm Street, Oil City, Penn. Later their title was changed to The Oil Well Supply Company, which it remains to this day. The Oil Well Supply Company, probably due to Mr. Eaton's genius, rapidly expanded and soon had supply stores in every petroleum region east of the Mississippi. Today, in California, The Oil Well Supply Company is one of the foremost companies catering to the oil well trade in the State.

As we have noted, Mr. Eaton's death is regretted by a great number of people. We ourselves never had the opportunity of meeting Mr. Eaton personally, but take for granted his engaging personality, and his kindness; his achievements speak for themselves.

SOUTHERN PACIFIC LAND CASE

The "Derrick" will give as fair a presentation of this famous case as soon as possible, and detailing as much as possible the events which brought this case so prominently before the country. A special article is being prepared by a Coalinga operator in regard to the whole matter.

MAKE IT PERMANENT

It will be recalled by readers of this magazine that immediately the Panama-Pacific International Exposition won out in Congress, the **California Derrick** made a plea for a **great exhibition** of the products of the greatest industry in California—the oil industry.

Since that time considerable has been accomplished looking towards the exhibit, but, we desire to say, not nearly as much enthusiasm has been demonstrated in this direction as might be desired. However, as matters concerning all the exposition exhibits are still in embryo, this is little to be wondered at. The time is not yet ripe.

We wish to make a plea for a **permanent exhibit** of the petroleum products of California: Let the exhibit which will be arranged for the Panama-Pacific Exposition, be kept **intact** and placed, if satisfactory to the persons who arrange for and contribute to the exhibit, in some such suitable permanent home as the State Mining Bureau in the Ferry Building, San Francisco.

The only petroleum exhibit at the Mining Bureau at present is a minature derrick and a few photographs and glasses filled with vari-colored oils. This is an execrable display to show the visitor within our gates who wishes to gain some sort of idea as to the oil fields and industry in general.

Knowing the niggardliness with which the State Mining Bureau is treated in the matter of appropriations for its support, by the State Legislature, we feel sure that the present

exhibit is by no means all that State Mineralogist Aubury could desire, woefully inadequate as he must feel it to be.

We therefore take this opportunity to suggest improvement, with the hope that we will **not** be classed as officious meddlers. If so, let it go at that—the State Mining Bureau has met **wretched** treatment at the hands of the Legislature and a word in its favor will not go amiss. We hope a permanent exhibit will be arranged for.

It costs as much to drill some wells in California as to develop a "considerable pool" back East. But the returns from that one well, if successful, make the returns from the pool look inconsequential. Consider the Menges, the Lakeview, or any number of others.

The hope held out for financial returns of any magnitude to the producer, in the "Oil City Derrick," is limited and somewhat shadowy, not to say altogether disconcerting. Consider the following: Each day petroleum is becoming a greater power in industrial circles, and is developing along lines unexpected and undreamed of in its beginning, and **some day the success of application and invention will give an impetus to the financial side for the producer.**—Not much optimism there, is there?

Practically all the great pipe-lines of the country, a number of the greatest oil companies and oil and pipe-line companies combined are being investigated by the Interstate Commerce Commission on the complaint that they have "established certain rates, classifications and regulations which are unjust, unreasonable, unjustly discriminatory, unduly preferential and prejudicial and otherwise in violation of the act to regulate commerce and the acts ammendatory thereof." The first hearing is to take place at Houston, Texas, and from then on until the entire business is completed. The following companies in California are on the list for investigation: Associated Oil Company; Associated Pipe Line Company; Central Oil Co., of Los Angeles; Puente Oil Company; Standard Oil Co., of California; Union Oil Co., of California. In other words the Standard, Associated and Union are all subject to investigation for restraint of trade; with a possibility that the Agency may come next.

A Matter of Economy

This is the day of economy, and economy must prevail. Concerning this, read the following clipping from the "Mining and Scientific Press":

Economy results from the introduction of petroleum as fuel on shipboard, not only because of the greater calorific power of the fuel, but because of incidental savings. When the steamship "Mariposa," running between San Francisco and Tahiti was changed to an oil-burner, a reduction of 16 men was made in the engine-room force. The "Mauretania" carries 312 firemen, whereas it is estimated that if oil were burned, not more than 30 would be needed. The extra men require wages, food, and room, all of which are important on shipboard. Oil fuel requires less space per heat unit than does even the best coal, and 36 cubic feet of oil is equivalent to 67 cubic feet of coal as usually stored in ship bunkers. The ships burning oil have larger cargo space available. In the case of warships this permits heavier guns or a longer steaming radius, either of which might prove decisive in a great national crisis. The Liquid Fuel Board which in 1902 studied the problems of oil fuel for the navy reported adversely on the ground of the limited supply of petroleum available. Since that time, however, the annual output of the United States has practically doubled, and adequate supplies are now available on both coasts. Oil is being introduced on some of the warships and an increasing number are likely to be equipped for its use.

Standard Said to be Doheney Oil Purchaser—Standard Developments

E. L. Doheny, president of the American Petroleum and Mexican Petroleum Companies, returned from a trip to New York recently and it was announced that while there he made a contract for 15,000,000 barrels of oil to be delivered from the Mexican Petroleum property near Tampico. It is now stated on good authority that the purchaser is the Standard Oil Company ,and that deliveries will begin at once at the rate of 5000 barrels a day. It might be added that we have no way of confirming the report. Standard Oil developments in California during the last two months were largely covered in our last issue, as there has been scarcely anything new in connection with the company here, in the last thirty days.

A. L. BARNES

One of the "Boys" Who Went to Burmah from Coalinga Last Month

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Changes in Lucey Company

Mr. William H. Fenneman, sales manager of the J. F. Lucey Company, is to leave the service of that company and go into business October 1st for himself. The severance of his connection is regretted by a large circle of friends.

At the same time that Mr. Fenneman leaves the Lucey Company Mr. Paul N. Boggs re-enters their service, coming back to assume the position of Assistant General Manager of the company. Until recently Mr. Boggs has been with the Adeline Consolidated Road Oil Company, of the West Side fields. He is a person who has always given the greatest satisfaction and judging from the position he assumes stands very high in the estimation of his soon-to-be business associates.

New Kern River Sand

An event of great interest in Bakersfield oil circles is the late discovery of a lower sand in the old Kern River field by the Monte Cristo Oil Company. It is stated that in a deep well a production of 700 barrels per day has been obtained; which is certainly something undreamed of heretofore in the Kern River field. If the production holds up, there is no telling exactly what place Kern River will make for herself in the history of the California oil fields. We await further developments with interest.

Hercules Refinery Goes up in Blaze

In the fiercest and most spectacular fire that Los Angeles has ever witnessed the Hercules Oil Refining Company's plant, located outside the city limits of the Southern metropolis, went up in a cloud of dense smoke; with deafening detonations which startled entire Los Angeles; and with a property loss aggregating between $100,000 and $150,000 according to estimates made by a Los Angeles correspondent of the "Derrick." No loss of life was caused, but several were reported injured. The detonations were caused by the explosion of stills, several of which were reported destroyed. A large amount of asphalt, distillate and other oils was consumed by the flames; also a number of tanks and an asphalt storage pit. The refinery will be rebuilt, according to latest advices.

Resignation of Mr. Scribner

The resignation of Secretary of the Associated Oil Company, Othello Scribner, caused quite a little flurry in oil circles when the news leaked out around the first of the month. It has developed that Mr. Scribner's resignation was not the "forerunner of a general shakeup in the Associated Oil Company," as stated by several of the loud-booming publications, but was due entirely to personal reasons of the resignee. Nothing has yet been learned as to Mr. Scribner's associating himself with the Independent Agency.

Ventura Properties to be Developed by English Capitalists

A very large deal, in which former State Mineralogist A. S. Cooper is largely interested, is now being consummated through the efforts of Stephen W. Dorsey, former United States Senator from this State, Mr. Cooper and John Doherty, of Los Angeles, who have secured 14,000 acres of promising oil and asphaltum lands in Ventura and Santa Barbara Counties, on an option to purchase by an English syndicate, which is stated to be abundantly supplied with the necessary capital to carry on a deal of this size. It is stated that $600,000 has been deposited to insure the consummation of the deal; $40,000 to insure each of fifteen wells.

The land tracts comprised in the deal are as follows:

South half of Temescal Ranch, about 4700 acres; Lloyd holdings in the ex-Mission; Peters" property, on the Little Sespe; Turner property, on the Little Sespe rim rock; Pirie Ranch, in the Ojai; Sturgis Ranch, in the Santa Ana, comprising approximately 2000 acres.

The region in which these lands are located has been minutely described in the splendid treatise which Mr. Cooper recently ran in this magazine under the title "Uplifts and Subsidences," the last part of which appeared in the August Derrick.

The combined production of gold, silver, copper, lead and zinc in Nevada, in 1910, was valued at $34,152,148.; which is over three and one-half million dollars smaller value than that of California's petroleum production for the same period.

State Mineralogist Aubury places the value of the State's total output of petroleum for 1910 at $37,689,542.

The Toiler, an internal combustion engine of the Diesel type, is crossing the Atlantic ocean at the present time, and will navigate the great lakes. The Toiler is the first internal combustion engine to cross the Atlantic under her own power. The Toiler is 248 feet in length with 42½ feet beam and consumes one and three quarters tons of fuel oil per day. It is predicted that the Toiler type of vessel will revolutionize the carrying trade. The Toiler makes nine knots per hour.

The Management of the California Derrick hereby calls the attention of all subscribers to the California Derrick who were formerly PAID SUBSCRIBERS to a publication known as the OIL BOOK, to the following:

1. The CALIFORNIA DERRICK is about to apply for the privilege of the second class of mailing matter, for the purpose of expediting the delivery of this magazine to its readers, as it appears monthly.

2. The CALIFORNIA DERRICK has received a number of complaints every month because of the late delivery of the publication, to the various subscribers.

3. Late delivery is caused because of the fact that we have never applied for the SECOND CLASS mailing privilege; we have paid third class rates, which are higher than second class rates, for the purpose of advertising this publication by issuing an unlimited number of copies to be used as samples, by which to gain an increasingly greater circulation. This has hampered us to some extent because third class matter is classed as advertising, and is not given the care and attention that is given second class matter in the mails.

4. In order to comply with the regulations of the United States Post Office, in the matter of securing the second class privilege, so that we can deliver your mail to you under that privilege, and not under the third class as heretofore, it must be absolutely shown that you are a BONA FIDE PAID SUBSCRIBER TO THE PUBLICATION WHOSE PAID MAILING LIST WE TOOK OVER, and that you agree to accept the CALIFORNIA DERRICK in its place. You have new been receiving the CALIFORNIA DERRICK, under terms especially favorable to yourselves, for six months or more, but your acknowledgement, in writing, is necessary to the Postal Authorities. Note the following regulation in the matter of transfer of circulations, from the Postal Regulations:—

> "The transfer of a legitimate subscription list from one publisher to another, for the purpose of enabling a publisher to give a fair return for the money paid by a subscriber when a publication is discontinued, is considered legal when the transaction is BONA FIDE and the recipients of the new publication consent thereto"

It is in compliance with the above regulation that the CALIFORNIA DERRICK requests that you fill in and sign the blank below, so that when the application for the SECOND CLASS MAILING PRIVILEGE is made for the CALIFORNIA DERRICK, YOU will be entitled to receive your copy under that privilege.

In other words: For the purpose of bettering our service to YOU, we ask that you proceed with this form, to entitle you to receive the service which our other subscribers are GOING TO RECEIVE.

Once again we wish to impress upon you:

YOU WILL NOT BE CONSIDERED A BONA FIDE SUBSCRIBER TO THIS MAGAZINE, NOR ENTITLED TO HAVE YOUR MAIL DELIVERED TO YOU UNDER THE SECOND CLASS FRANCHISE, UNLESS WE HAVE AN ACKNOWLEDGEMENT FROM YOU IN WRITING, THAT YOU HAVE AGREED TO ACCEPT THE CALIFORNIA DERRICK IN LIEU OF THE "OIL BOOK" FOR THE UNEXPIRED TERM OF YOUR SUBSCRIPTION THERETO.

For this reason we request that you

FILL IN THE BLANK BELOW IMMEDIATELY AND FORWARD TO THE CALIFORNIA DERRICK AT ADDRESS SHOWN ON BLANK

California Derrick,
788 Mission Street,
San Francisco, Cal.

October,.....1911

Gentlemen:

I hereby acknowledge receipt of your publication, whichI have accepted and do accept in lieu of the "Oil Book," which was discontinued, and for which I paid $.....,I desire to receive the **California Derrick** for the unexpired term of the "Oil Book" subscription.

Signed.....

Address:

Street .....City .....

State .....

Livermore Valley Scene of Operations of W. M. & S. Oil Company—Report on Property—Other Developments in Livermore Region Where Activity is Renewed

Backed mainly by Oakland capital, the W. M. & S. Oil Company is making a stiff fight to get "pay sand" in the light oil region eight miles east of Livermore, in the Livermore Valley, in what is generally known as the Livermore field, where oil has been seeping to the surface ever since the first settler can remember, and where light oil has already been secured by the Alisal Oil Company.

The scene of the W. M. & S. Company's operations is on Section 15, 3-3, M. D. M. At present the copany expects to get oil in marketable quantities before reaching 1500 feet depth. They are now down 300 feet. The company controls under leases on low royalties some 500 acres of the choicest prospective oil lands in the district. They hold an option to purchase 240 acres of this property and will do so if their developments are crowned with the success they are working so hard to achieve.

Taking no chances, the company are drilling with a full Standard rig; engine, boiler and equipment are the latest and best, the company having gone to much expense in fitting out. Their drillers are seasoned and experienced, having come from Coalinga.

Thus far the company's outlook has been encouraging. The drill has let considerable gas loose and a fair showing of oil has been encountered in the shale. The well was located by W. A. Brophy. The location has been passed on since by a number of experienced operators who have been attracted to the region by curiosity or other business with the idea of investment in mind, as a very desirable one. H. A. Rispin, connected with the Lost Hills Consolidated Oil Company, and several others, is said to be interesting himself in the region, and has spoken favorably of the W. M. & S.'s operations and location.

The operations of the W. M. & S. have stimulated considerable interest and another company, the Independence Oil Co., is now hauling material in for a big Standard rig and will drill on their holdings, which are located about a quarter of a mile from the W. M. & S. properties. Another company is also to develop in this region, if certain reports which have come to us lately can be trusted. This company is the "Livermore Boston Oil Company," with holdings on Section 7, T. 3 S., R. 3 E.,—(7-3-3)—adjoining the W. M. & S. The Livermore-Boston is said to be composed entirely of Coalinga people. It might be added that the Standard Oil Company controls considerable land in this district.

Mr. Robert A. Smith (offices, First National Bank, Oakland), is largely interested in the W. M. & S., being vice-president, manager and director, and stated that the company was mostly financed by the incorporators. When asked if the company had an engineer's report on the properties developing, he stated that they would not have gone into the region without consulting an engineer, and that a favorable report had been given them. Believing this report will be of interest we have secured it from Mr. Smith and run same (omitting topographical map) for the benefit of oil men who may be interested in the region:

Report of the Property of the W. M. & S. Co., Livermore Valley, Cal.
(By O. H. Packer, Room 102 Mills Building, San Francisco, Cal.)

I have made a preliminary examination of your oil property comprising the south half of the northwest quarter, of the southwest quarter of Section 15, and the east half of Section 16, township 3 south, range 3 east, M. D. M., and containing 340 acres.

In making this examination I carefully inspected all the land within a radius of one mile of your drilling rig, being already familiar with this oil field in a general way through former visits.

The property upon which your rig is now situated is in the foothills near a pass between Livermore Valley and San Joaquin Valley. It is favorably situated.

There are oil seepages in the ravine below the rig and at other nearby points, producing an unusually high grade of oil. The Alisal Oil Company's well, situated within a few hundred feet of your rig, but not so favorably located, passed through several strate of oil-bearing sand, and produced considerable oil of an exceedingly high quality. The oil I personally tested had a gravity of 33 degrees Baume. Owing to its having been exposed the lighter material has volatilized. I am informed that the fresh oil runs 37 to 38 degrees. As much of the oil on the market is as low as 20 to 22 degrees, the value of such an ail as your district will produce can be appreciated. It will sell for from $1.50 to $2.00 a barrel.

There are fossils of the tertiary age (probably Miocene Period) in great quantity upon your land and in the vicinity, and a snearly all the oil of California and Texas is from this age, the presence of these fossils is very favorable.

The wells that have been drilled in the vicinity of Livermore were all very shallow—from 150 to 500 feet deep. The Alisal reached a depth of 925 feet and penetrated oil sands, a circumstance of much value to you, as you can now determine with considerable accuracy where to drill. It is not only unwise, but unjust to condemn this district because these shallow wells have not produced gushers.

Taking all into consideration, topography, situation, seepages, fossils exposed, and the high quality of the oil thus far produced, I consider this district one of unusual promise. There are, apparently, many other favorable conditions, but these I do not feel justified in mentioning without a more thorough and critical examination.

Those who are able to invest in this enterprise will, in all probability, make large profits on their investments.

Very respectfully,

(Signed) O. H. PACKER

J. J. Wheelock, president of the company, was for years actively engaged in the oil business in the Pennsylvania oil fields.

CALIFORNIA OIL IN THE NORTHWEST AND IN ALASKA

Special Correspondence by W. T. Prosser, Seattle, Washington.

California oil is becoming constantly a larger factor in the Northwest and Alaska. Its more extended use on the railways passing through the timber belts of Washington has contributed to the making of a record in low forest fire losses, as the figures this year run only to a few thousand, while usually the destruction of trees runs into the millions. Not before in the history of this district has the loss been so small.

Also California oil has changed the entire aspect of the Alaska coal question. With the heaviest users of fuel changing from coal to oil the market for Alaska coal—should its mining be permitted—would be greatly restricted. In fact, some students of the situation declare that private capital would be very loth to build into either the Matanuska or the Bering Lake coal fields, with the prospect of entirely creating a market. The first of the far northern railways to determine upon the use of oil was the Copper River & Northwestern (the Morgan Guggenheim line) and a 35,000 barrel storage tank is now being erected by California artisans. The adjacent copper mines owned by the Guggenheims will also be operated with oil as fuel.

News now comes that the White Pass & Yukon railway, which is one of the foremost routes on the American continent, is to change to oil and along with it half a dozen Yukon river boats owned by the same company. Tanks are to be erected at Skagway, White Horse, Selkirk and Dawson and oil is to be handled commercially, as well.

Sentiment in Seattle and Alaska is crystallizing in favor of the opening of the coal areas to entry, with a government reservation of coal in each field amply sufficient to protect the government against monopoly. Undoubtedly Secretary of the Interior Walter Fisher learned much by his recent trip, but he was committed to a leasing system before he left, and was of the same opinion still, upon his return. He did see one other outlet, however, and that was the building of government railway into the Matanuska coal fields, but this idea is not likely to become popular on the Pacific Coast. Mr. Pinchot declares he has had occasion to change his mind in one or two particulars.

Oil Prospects in Rawlins, Wyoming

Rawlins, Wyoming, is the scene of oil developments at the present time, the Larsen Company, composed of local persons, being down 600 feet in the neighborhood of that community, with their No. 1 well. It is expected a well will be brought in between 1000 and 1500 feet, as geological indications point in that direction.

The News from This Field is Written By
GUY H. SALISBURY—California's Best Known Oil Correspondent

(Note: Mr. Salisbury did not contribute the first two paragraphs hereunder as he had not received the information in time.—Ed.)

Production Displays Small Advance

The production of this field advanced from 1,572, 600 barrels in July to 1,583,884 barrels in August, a total increase of but 11,284 barrels. Shipments out of the field were 200,000 barrels less than the July shipments from Coalinga. According to R. W. Dallas of the Independent Agency the August production dropped 59,708 barrels, instead of increasing 11,284 barrels, which shows, if it shows anything at all, that the Agency figures and the Standard Oil figures do not always correspond; in this case there is a considerable discrepancy in the figures.

Important Strike of Canadian-Coalinga in the South Field

By all odds one of the most important strikes made in the Coalinga field in a long time is that of the Canadian-Coalinga Oil Company in their well No. 1 on section 8, 21-15, the oil sand being hit at 2880 feet, after perforating a hard shell, carrying the 8¼-inch casing. While the bit only went about four feet into the sand, the gas pressure was so strong that with 2,800 feet of water in the hole, the oil, which is said to be of 28 gravity, Beaume, began to flow over the casing. The head driller, Orvall Geiser, who drilled the Silver Tip and the Mohawk wells, stated that the well makes a better showing than did either of these gushers. When the oil began to flow over the casing he pulled it thirty feet into the derrick and still the pressure continued to force the oil up through the water, with occasional blowouts that covered the derrick with oil. It was thought that by pulling up the casing the well would bridge over in the bottom and thus afford a chance to use the 8-inch for a water string, cementing off the same on the shell which was pierced just prior to encountering the oil sand, the fear being held that the ten-inch casing would not stand the pressure if the water were to be bailed out. Sumps have been completed and a gate valve placed on the casing so that if the well does not bridge over or the gas pressure subside within a short time the well will be bailed down and allowed to flow through the 8-inch casing. If it is allowed to flow it is thought control over it can be gained and that the water can be cemented off with the 8 inch at 2680 feet, where it is at present cemented off with 10-inch. The idea of cementing with eight inch is due to the company's not desiring to take any chances on the outside pressure collapsing the larger pipe.

A. J. Pollak, of the well known San Francisco firm of petroleum engineers, is engineer for the company. Mr. Pollak is highly elated at the performance of the well. The Coalinga Record, speaking of him, stated:

"Pollack is highly elated over the strike of his company, but he is taking his time about arranging for a production from the well. He wants to take no chances whatever, and bailing will not start until he is fully convinced that they cannot go ahead otherwise."

"The importance of the strike to the South End Field can hardly be over emphasized" stated Guy H. Salisbury, the well known Coalinga oil man. "The oil appears to be from 30 to 35 degrees gravity, although no gravity test has yet been made. The fact that the oil has been found south of Whartham Canyon means a great deal to the South Field. It means that the Boychester, the Best Yet, the Blair and Consolidated Oil Companies all have a chance to strike the pay sand, and at a reasonable depth. The quality of the oil, too, must not be overlooked."

The two earth-reinforced-concrete reservoirs being built by the Associated Oil Company, on Section 9, 20-15, are fast nearing completion, being now ready for the roof. The work had been retarded on account of sand and gravel encountered in excavating; this had to be cut out and filled with soil and puddled to make a perfect foundation for the concrete. The sides are 22 feet high, 33 feet on the slope and 11 feet wide on the top. The earth is tamped with a Los Angeles tamping roller, making the walls very solid. There were employed on this work most of the time, one hundred and fifteen men. About 200 head of animals were used on the 45 Fresno scrapers 8 scrapers mounted on wheels and two tamping rollers. The Mahoney Brothers, contractors of San Francisco, have almost completed the excavating and will turn the reservoirs over to the company in a few days. The bottoms of the reservoirs are 9 feet below the level of the surface on the north side and 3 feet below the surface level on the south side. The bottom diameter is 462 feet, that of the top being 528 feet. As soon as the excavating is fully completed the roof will be put on; it will require about 500,000 feet of lumber for each reservoir. Then the concrete will be laid, three inches thick on the floor and two and one-half inches on the sides, reinforced throughout with 6-inch No. 9 wire mesh. These reservoirs will hold 750,000 barrels each. The work of excavating was in charge of B. Z. Pool; the engineer for the Associated Oil Company is Ed. D. Cole.

K. T. & O. Reservoir

The Kern Trading and Oil Company is well along with the work of rebuilding the old earth reservoir on section 7, 20-15. The roof is now on; it is a very substantial piece of work, reflecting credit on the engineer in charge, and being far more complete than was the old S. P. reservoir. The timbers supporting the roof are 8x8, Oregon pine, the roofing boards are one inch thick covered with roofing paper. The

work of laying the concrete is now under way. The floor diameter is 400 feet, and the walls 20 feet high. It has taken nearly 500,000 feet of lumber to build the roof. The uprights rest on cement piers well set in the soil. There will be three inches of concrete reinforced with 6 inch No. 9 wire mesh on the floor and the sides will be reinforced with metal lath and also the 6 inch No. 9 wire mesh. This reservoir will hold 500,000 barrels. The engineer states that this reservoir will be ready to receive oil in a few days. The engineer in charge is from the San Francisco office.

The Four Greatest Coalinga Companies

The four largest operating companies in this field, as per memorandum based on the reports at midnight, July 30th, in number of producing wells, are the California Oilfields Limited, the Kern Trading and Oil Company, the Standard Oil Company and the American Petroleum. On July 30th California Oil fields had 92 producing wells, 13 wells were drilling and the entire production is sold to the Standard and Associated. On the same date Kern Trading and Oil Company had 81 produc ing wells, 32 wells were drilling and 12 new rigs stood ready for the driller. The company's production for July amounted to about 173,512 barrels, sold to the Southern Pacific. The Standard had 71 wells producing, 5 wells were drilling, with production somewhere near 160,000 barrels per month. The American Petroleum had 56 producing wells, 15 wells were dril ling; production near 126,000 barrels per month, sold to the Producers Agency under special contract. The Kern Trading and Oil Company forged ahead rapidly during the previous six months.

United Development Company

The United Development Company have moved the derrick o nthe northwest quarter of Section 17, 20-15, to the northeast corner of the section, just south of the Coalinga Security. The rig has been completed and rigged up, and well No. 1 will be spudded this week. Manager George D. Roberts states that his company will develop oil on each quarter of section 17, 20-15 and may soon start two strings of tools. The camp has been completed for the accommodation of the men on this section. It consists of a cook-house and bunk-house, and will be occupied next week. On section 19, 20-15, the 10-inch string of casing was landed in well No. 3 last week; the 8¼-inch string has been set in and drilling resumed. Well No. 2 will soon be on the beam; the well has the perforated pipe in ready for the pump.

K. T. & O. Moves Rigs

A number of teams were employed by the Kern Trading and Oil Company in the early part of this month hauling lumber and heavy timbers away from the southeast quarter of section 19, 20-15, as orders had issued that all material not nailed down was to be removed to the company's lumber yard in town. The material removed consisted of full rigs that were haulded out during the rush orders of the Kern Trading and Oil Company, issued about three months ago, when the weather was "warmer than now." These orders to remove to town the loose material applys to the seevral hundred odd-numbered sections leased from the Southern Pacific.

California Coalinga Oil Company

The California Coalinga Oil Company, section 8, 20-15, is 2,806 feet deep with 8¼-inch casing, heavy California Special. The formation at present is shale; the drill has passed through a very hard shell. Well No. 1 has improved since the water has been shut off in well No. 1 of the Coalinga National; the oil has increased and the percentage of water has decreased very materially; the well is doing 175 barrels per day; considerable gas is coming with the oil.

Coalinga Oil and Gas Company

The Coalinga Pacific Oil and Gas Company, section 7, 20-15. There are seven completed wells on this property. Well No. 1, "in her time" was one of the banner wells on the west side field, the "pride" of W. W. Parlin, manager. This well had made and delivered to the Associated Oil Company, prior to January, 1908, 520,052 barrels of oil in 39 months. The present production of this property is a little over 8,500 barrels per month. There has been a little water trouble in two wells, but this is now being adjusted.

Dominion Oil Company

The Dominion Oil Company, section 7, 23-17. The under-reamer in the hole has been drilled by and cased off; the 8¼-inch casing is now 2,200 feet deep and going nicely. Formation: The bit has just passed through a very hard shell into a good-appearing sand; the hole is in good shape. Considerable gas is flowing from the well, carrying colors of oil.

Burmah Company Signs More Coalinga Men

The Burmah Oil Company, Limited, have signed up the following men on a three year contract as drillers to work in the oil fields of upper Burmah, India:—W. B. Shaw, B. A. Kelsey, W. M. Irwin and Eugene Adams, well known oil men of this field. The men sailed from San Farncisco for Rangoon by way of Honolulu, Hong Kong and Singapore, on the Pacific Mail steamer "Persia", on September 13th, and are due to ar rive in Rangoon on October 24th.

Deep Well on Apex of Anticline

Wilcox and Fleshhacker, on section 12 20-15, are 4,080 feet deep in well No. 1 with 8¼-inch casing. The present formation in which they are now drilling is a thick body of shale, alternating with sandy shale. The well is being drilled near the apex of the Coalinga Anticline, about one half mile southeast from the Mohawk well.

Azores Oil Company

The Azores Oil Company, section 26, 21-15. Well No. 1 is over 4,175 feet deep with 4½-inch casing; formation blue shale, the first blue shale encountered since leaving the 3,525 foot mark; there was 700 feet of blue shale above that point.

Confidence Completes Fifteenth Well

The Confidence Oil Company, section 31, 19-15. Well No. 15 was drilled to about 1,300 feet with 6¼-inch casing; was completed about one month ago and is now making over 100 barrels per day; occasionally the well flows and then making about 150 barrels per day.

Notes of Events Through the Month in Coalinga

The Coalinga Royal Oil Company on Section 8,19-15, twelve miles north of Coalinga, struck the second sand at 1170 feet September 22, and got a heavy gas pressure with most encouraging oil showings. Water was shut off at 900 feet in 10-inch casing and th ewell is now being drilled in 1-inch. Further developments eagerly awaited.

The Castle Oil Company is loosening their 6-inch casing in order to install 8-inch in its place and to shut off the water with the 8-inch. After the water is shut off the 6-inch will be carried down to the sand which it is thought will be struck at somewhere near 4000 feet.

R. Baker, the well known Coalinga Oil Well Commissioner, whose work was to see to the shutting off of water in oil wells, for the preservation of the oil strata from water invasion, has resigned. The resignation was caused by Mr. Baker's inability to continue his work for the small pay granted the office of Oil Well Commissioner, and other reasons.

Engineers for the Fresno-Coalinga & Monterey railroad have finished the survey of the line. The company, which has not yet been incorporated, will have a $4,000,000 capitalization. It will tap the Coalinga oil field and way stations between the terminals. The road has much moral and will soon have money support from the Coalinga oil field.

The wagon road from Coalinga through Priest Valley is to be rebuilt. This will stimulate road and automobile traffic between Coalinga and the Coast. The Associated's pipe-line, which passes through the valley and is the cause for much travel on the part of officials of the Associated Transportation Company, is the cause for this re-building, as the company will pay twenty-two hundred dollars of the expense; the balance to be paid by the county.

It is stated in an exchange that the American Petroleum Company, as well as the other Doheney corporation, the American Oilfields Company, are both to be taken over by a New York syndicate at an early date. The American Petroleum Company is one of the largest in Coalinga.

Production for Month Shows Light Increase

The total production of the three West Side fields, Sunset, Midway and McKittrick, together, shows an increase over the month of July, for August, of 225,349 barrels. By districts the different yields for the month were as follows: Sunset, 479,756; Midway, 1,957,396; McKittrick, 485,887 barrels. McKittrick made the proportionately large increase of close to 60,000 barrels. Midway ran up the total monthly out put almost 150,000 and Sunset dropped 5394 barrels in production.

Lakeview Winds Up Spectacular Career

After the most spectacular career an oil well ever enjoyed, during which it gushed between nine and ten million barrels of oil, flooded the market until fuel oil dropped two-fifths of its former price at the well, performing for eighteen consecutive months, attracting national and international attention both for its output and longevity, the Lakeview Gusher has ceased entirely to flow. It is thought that the cessation of its activity was due to a caving of the walls of thewell. As parts of the pipe, which were ejected from time to time, were worn to razor-like thinness, this appears the most reasonable assumption accounting for the wind-up of the wonderful well. The Lakeview attracted the world's attention to the California oil business. It came in March 15, 1910. At first reports every oil paper out of the State deprecated the wires of the size of the well, saying it was another California fairy story, and that if the well produced ten thousand barrels a day it was a marvel. But photos and the sworn statements of production by those in control soon did up the would-be "knockers" and they turned from praises of the "phenomenon" to knocking the industry in general with cries of over-production long before the end of the second month of the well's performance. Predictions were daily passed out by the knowing ones that the Lakeview would die summarily when the ocean broke into it (which it undoubtedly would, if the ocean had broken in) and other equally foolish statements came out boldly in print as "the dope." Nothing happened as scheduled. Production of the well ranged from as high as 75,000 barrels per day down to about 800 barrels up until the time of the end. However, today there are few who would really wish it back as a gusher; there is enough oil above ground without worrying about the death of the "oil leviatan." Just prior to the last breath, so to speak, of this most wonderful well ever drilled in the United States—(or elsewhere from the standpoint of production saved and to be marketed)—came the settlement of the famous suit of Messrs. Dunn, Barrett, Hodgkinson and Fried, for their royalty oil produced by the Lakeview. The Union Oil Company, which owned 51 per cent of the stock of the Lakeview Oil Company, and which it was therefore "up to" to care for the great output, had trouble unending to accomplish this difficult feat. At one time they were threatened with suit by Miller & Lux for letting some of the oil escape. (They could not help it). Again, they had to build huge reservoirs, consisting of walled-in canyons, to hold the oil. Members of the Independent Agency complained because the Lakeview oil was transported before their output, due to the fact that the Union wished to get the oil in concrete reservoirs on the Coast before the wet weather should set in and wash away the clay barriers which held it in leash, thus allowing the oil to run unrestrained to the waters of Buena Vista Lake, Miller & Lux's reservoir. No sooner had 1,000,000 barrels of Lakeview output been stored in one of the immense concrete storage reservoirs built at San Luis Tank Farm than the reservoir gave way and 495,000 barrels of oil was lost, running beyond all saving. About this time Messrs. Dunn, Barrett, Fried and Hodgkinson began to get anxious for a little of their royalty money. The Union did not give it. Some time thereafter a suit was instituted which was pending until recently, when it was setled. The plaintiffs take 1,000,000 barrels of oil as their share of the royalty, which is probably entirely fair considering the outlay and expense to which the Union was put to care for the Lakeview output, the time, the labor, and the losses suffered by seepages, breakages and what not. This 1,000,000 barrels of Lakeview oil is said by various publications to have been sold by its owners to the Standard Oil Company for 30 cents or 35 cents per barrel for the entire amount. Even at 30 cents, every one of the four royalty owners will receive an average of $75,000 apiece, enough to last an ordinary individual for a lifetime. In addition to this million-barrel settlement the following understanding was arrived at:

The Union Oil Company has agreed to operate not less than one string of tools on the Lakeview property (Section 25, 12-24 Maricopa), until eleven wells shall have been drilled and drilling operations are to continue as long as oil shall be worth 20 cents per barrel or more at the well. Thus, at least four people out of all those interested in the "most wonderful oil well ever drilled" are to get a moderate sized fortune out of it; although the hotel keepers of Maricopa made individual fortunes caring for sightseers, automobile dealers did likewise and sales innumerable in the West Side fields came about as a direct result of the Lakeview well. Another side of the story, and one not quite so roseate to contemplate, is the big off-shoot of promotions which have failed to do anything but get the money of the ill-advised, all of whom hoped for "another Lakeview." But the investors in purely wild cat schemes were, in all probability, by no means so numerous as has been stated. Anyway ,there is and has been only one Lakeview Gusher and the probability is there will never be another. If there is, Californians hope it will be in Mexico.

August Oil Gets Nice Well

The August Oil Company, in the Maricopa District, has struck the live sand and brought in a well that is estimated to be producing 12,000 barrels a day. Latest reports state that the well has setled down to a steady production of 2500 barrels per day. The Standard has a contract for the oil.

Buick Oil Company

The Buick Oil Company recently issued a statement showing the following concerning its condition:

Shares, to incorporators, 500; donated, 100; paid for land, leases and options, $2,100,000; sold for cash, $1,073,394; in treasury, $1,826,006 Total, $5,000,000. (A perfect balance).

Cash receipts were given as $268,716.62. Accounts receivable, total, $35,550.00, from Standard Oil Company, for August oil deliveries. Accounts payable for supplies and current expenses are given as $13,-014.10. Disbursements and costs for lands, developments, equipment and general expenses are given as, land, $73,182.62; balance, $170,-312.04. Cash and cash resources are as follows: On hand and in bank, $38,262.06. Standard Oil Company, August deliveries, $35,550.00. A good showing.

It is stated by a contemporary that the Buick will pay a substantial dividend "in time for Christmas shopping," to be exact, on December 15th; amount to be paid not stated. Well No. 1 is producing 105,000 barrels per month, which brings in a steady income of $52,500, out of which expenses must be deducted. The Oil World" states that: "The policy of the directors will be to keep a sufficiently strong cash surplus to the credit of the company and at the same time pay dividends as fast as conditions warrant." To "Questioner": The address of the Buick Oil Company is Los Angeles, Cal.

Big Gas Well

The Standard Oil Company has another big gas well, situated on Section 26, near Taft. The well is producing between thirty-five and forty million cubic feet of gas per day. The gas flow was struck at a depth of 2100 feet, and threw the mud and water high over the derrick, causing the rumor that another huge oil gusher had been brought in. This well is by no means as large as No. 5, the famous Buena Vista Hills gas gusher which produced for many weeks as high as 50,000,000 cubic feet of gas daily, in all probability the greatest gas well ever struck in North America. This well gushed gas with a tremendous roar, which could be heard for miles, and which tore up a huge block of cement made as an anchor to hold down appliances for its control, shattering it mightily, twisting steel and taking, we believe, one life. One Standard gusher, which caught fire (we are not sure whether it was No. 5 or not), made a torch which could be seen plainly in Bakersfield fifty miles away, and which gave rise to the rumor that the Lakeview gusher, which was performing at that time, was undergoing destruction. The blaze was 1500 feet in height, blue and yellow in color. It was finally extinguished by means of a battery of steam boilers, all of which were turned at its base at the same time, shuting off the flame from the gas. Later it was controlled and is now furnishing its production for use to consumers, being piped to all oilfield towns nearby and to Bakersfield. It is probable that the new well will be controlled and shut in.

Well No. 3, on the same section, is due in now. It is expected to be a gas well also.

Shunned Region Has Oil—No "Break"

The Los Angeles Oil Company, which is drilling on Section 32, 32-23, has a good showing of shale oil and a heavy pressure of gas at a depth of 1400 feet. This territory has always been considered doubtful, being back of the "break"—which appears now to be a break on the part of oil operators minds. E. D. Gillett, "one of the most experienced and best operators on the West Side," according to the "Midway Driller," i sin charge of the property. Mr. Gillett is the man who recently stated that oil could be produced at a very reasonable profit even at so low a price as 30 cents per barrel. Mr. Gillett's views are printed in another column. They are of real and valuable interest.

Hawaiian Gusher of Honolulu Company Still Making Great Production

Trains into the town of Shale had to be discontinued for fear of fire and all the companies operating in the region of Hawaiian Gusher No. 10 ceased operations temporarily, during the middle of the month while that well spouted steadily 20,000 barrels of oil per day. It is, or at last reports was, still spouting. There is a terriffic pressure of gas which has sprayed the territory in all directions in the neighborhood with oil. Sump holes are filled to overflowing. Every effort has been made, thus far, which could be made to try to get the big well under control, but without success. How long this will last there is no telling, but it is hoped that there will soon be a diminution in the force, when the well has "blown its head off" and that then it can be attended to. The well is located on Section 31, 31-23. They are now trying to cap it.

Two other "big ones" broke loose recently. They were the K. T. & O. well on Section 21, 31-23, which spouted 13,000 barrels in fifteen hours, and No. 34, of the American Oilfields, which flowed for some hours at the rate of 6000 barrels per day.

The Engineers Oil Company, Section 14, 31-22, North Midway, have struck the "big sand" at 1800 feet and expect a "whopper." They lease from the Bear Creek Oil & Development Company, on the same section.

The Mocal Oil Company, Section 26, 31-22, struck oil at 1252 feet recently and after passing through thirty-two feet of live sand finished their well in 8-inch casing. Producing about 900 barrels per day.

News from this District Written by
W. D. MALTMAN

Increased Output for Month

Santa Maria's production for August shows a gain of 52,005 barrels over the July output, the exact figures being July, 408,933 barrels; August, 460,938 barrels.

ANNUAL MEETING OF PALMER OIL COMPANY

At the annual meeting of the Palmer Oil Company, held in the company's offices in the Crocker Building, San Francisco, the old directorate was chosen again and the officers re-elected, with Frank L. Brown president.

The balance sheet presented at the meeting showed that inclusive of capital and current assets the same amount to $3,077,538.59. The profits of the corporation for the year ending August 31, 1911, were $308,470.40. During the year the Palmer Oil Company delivered a total of 700,321.59 barrels at a value of $365,299.77. There was an increase of storage of 290,700 barrels. Including the oil used upon the property as fuel for construction of new wells and the operation of pumping stations and incidental uses, the production for the year ending August 31, 1911, was 1,011,780.35 barrels; value, $477,960.53. During the year ending at the period named, dividends to the amount of $219,879.24 were paid. In addition to the dividends paid, new construction and improvements on the property to the value of $208,394.35 was accomplished. The management of the properties for the past year were approved by the stockholders.

Palmer Wells

The wells on the Palmer property are in very good shape. No. 1 is pumping from a depth of 2300 feet, 400 feet shallower than the depth from which it already produced 1,500,000 barrels. The oil is becoming much lighter and shows a strong gas pressure. No. 4 is flowing about 500 barrels a day with every indication of being a gusher. No. 3 is increasing daily and is making about 600 barrels a day. No. 5 is being put on the beam and shows a lighter gravity oil than any of the other wells. No. 8, on the Stendel tract, is down about 1200 feet.

Growth of Sisquoc

The town of Sisquoc has grown very rapidly and supports three oil well supply houses, a general merchandise store and all the other necessary business houses. At present Sisquoc is the terminus of the Pacific Coast railroad, but an extension to the Palmer Annex, Palmer and Dome Oil Company's preperty is being rushed with all possible speed. This will greatly facilitate shipping oil to the refinery at Hadley and to seaport. The Santa Maria Oil Fields of California, who control the Palmer Anneq property, are building a broad-gauge railroad from Betteravia to their property north of the Palmer Oil Company's Blochman lease. They are also building one of the largest and most complete asphalt refineries in the State. The company is drilling seven wells, several of which should soon be producing regularly.

New Pennsylvania

The New Pennsylvania is drilling at 2800 feet, and putting in the heaviest 6¼-inch casing available. The hole is in perfect shape and is expected to be completed within the next 100 feet. President Finley states that after his past experience with this well he feels certain of bringing in one of the best wells in Cat Canyon.

West Oil Company

The West Oil Company have their well on the pump and it is improving greatly. The Brooks No. 2 is flowing without the air or beam and has every indication of being a big well when thoroughly cleaned out, the gas pressure is very strong.

Santa Maria Petroleum & Pipe Line Company and Others

The Santa Maria Petroleum & Pipe Line Company are rushing work on their No. 2 well on the Henderson tract. The Santa Maria Enterprise is preparing to bring in their No. 1 well just south of the New Pennsylvania and Brooks property. The Santa Maria Midway well No. 1 is down 2000 feet in a hard black formation that shows a strong gas pressure and the drillers believe that oil is close at hand.

NEWS FROM THE SOUTHERN AND COAST FIELDS

The Los Nogales, in the Puente Hills, is 2800 feet deep with no showing of oil t ospeak of as yet. A test will be made before abandoning the well. Ralph Arnold, the geologist formerly with the United States Geological Survey, who wrote the Survey's famous report on the Coalinga oil fields, is said to have reported favorably on the location of the well to its owners.

The Union Oil Company's well on the Sansanina lease, east of Brea Canyon, is close to 4000 feet deep. Some water trouble.

The Menges well is holding up finely. The entire production goes to the Union Oil Company at $1.00 per barrel; the gas, which comes in great volumes, is now being, or soon will be, utilized. It is stated that the gas will be refined for the gasoline content, which is large.

The average production of the 415 wells in the Los Angeles city field per month, as given by a correspondent, is 36,160 barrels, which is an average daily output per well of slightly less than three barrels. But then, the cost of operating is reduced to almost nothing; and the wells aer all old and have produced much oil in their time.

The Montebello Oil Company, five miles north of Fillmore, has two new wells, making from 150 to 200 barrels per day each. Two further wells are being drilled. Depth here to pay-sand is about 800 feet; gravity of oil (Beaume), about 30 degrees. This is generally good for $1.00 per barrel, sometimes $1.25 to $1.50.

It is stated that the Squaw Flats Oil Company, which was started by J. W. Gailey, of Texas, and disposed of by him after he had drilled 1600 feet without result, has, at a depth of 2100 feet ,struck a high grade oil-sand. Mr. Gialey is said to be again interesting himself on land adjacent to the Squaw Flatsi which he did not dispose of at the same time he let go of the former property.

The Scarab Oil Company, south of Piru, has two wells producing about 100 barrels daily of light oil.

The Union's Tory Canyon wells, which were drilled about eleven years ago, are said to be holding up splendidly, producing better than any others in Ventura County.

In Santa Paula the Baird Oil & Asphalt Company has completed its eight mile pipe-line from its property above Sulphur Mountain to the railroad, and is now shipping the oil. The Baird has a production estimated conservatively at 200 barrels per day. The pipe-line is capable of carrying 800 barrels per day of their product, which is very heavy.

The Amalgamated Oil Company, in the Salt Lake field, on the Wolfskill Ranch, has brought in a new well, probably good for 800 barrels per day. Depth, 2500 feet; gravity, about 17 degrees.

A. F. Gilmour's new well, No. 47, in the Salt Lake field, about 3675 feet deep, is producing 20-gravity oil; good for 50 to 75 barrels per day.

Standard Oil's well on the Yriarte Ranch (in the Fullerton field), is down more than 2000 feet. Going down.

The Union Oil Company's San Juan well, in Whittier, is 4500 feet deep in 6-inch casing; will be continued to the hoped-for sand, if inside the mile limit.

The Piru Monarch Oil Company is alleged to have penetrated 38 feet of oil sand in 1672 feet, with all indications of a fifty to sixty barrel well. The company already has one small producer, which is not at all in the fifty to sixty-barrel class. The size of the well is questioned for this reason.

The Midway Provident is drilling a deep test well in Santa Paula, which is of interest to oil men in that region for the fact that the old wells, which have been producing some 28 years, are very shallow wells, from 300 to 800 feet in depth, and small producers. The test well, now close to 1600 feet down, with 8¼-inch casing, will be extended to the lower sands said to exist here. The company leases from the Forest City National Oil Company.

San Bernardino is said to be in the throes of hysteria, due to the report of a certain professor, who declares that "There are large deposits of oil at the city's doorstep." The drill will tell.

RECENT INCORPORATIONS

(Furnished by California Secretary of State).

Following are the recently incorporated companies formed for the purpose of engaging in the oil business in California. Name of company, home, date of incorporation and names and homes of directors are given.

Algonquin Oil Company, Los Angeles; incorporated August 29th; capital, $500,000; directors, B. J. Montgomery, H. P. Richards, M. J. Potts, E. R. Peck and Hugh M. McKee, all o fLos Angeles.

Amity Oil Company, San Francisco; incorporated August 30, 1911; capital, $500,000; directors, Sanford Stein, H. S. Russell, Edwin B. Franks, Albert O. Winter and H. E. Bauchman, all of San Francisco.

Bradley Oil Company, Santa Maria; incorporated August 24, 1911; capital, $300,000; directors, C. W. Smith, J. L. Tunnell, H. A. Heller, G. M. Doane and Thos. Preisker, all of Santa Maria.

Chee Chaco Oil & Development Company, San Francisco; incorporated September 1, 1911; capital, $500,000; directors, Jos. Debenedetti, Half Moon Bay; W. F. Greany, San Francisco; H. H. Archer, J. E. Mc Namara, Moss Beach.

Oil Creek Oil Company, Los Angeles; incorporated September 5, 1911; capital, $1,000,000; directors, L. D. Rasor, E. A. Rasor, E. Valjean, Geo. R. McCain, and J. W. Todd, all of Los Angeles.

Santa Maria Yuma Oil Company, Los Angeles; incorporated August 28, 1911; capital, $50,000; directors, Albert H. Beach, R. R. Marable, I. N. Elder, John M. Speese, P. D. Olivera, Los Angeles; Francis L. Sellew, E. F. Sanguinetti, Yuma, Arizona.

LATEST STOCK QUOTATIONS ON THE SAN FRANCISCO STOCK AND OIL EXCHANGE

Prices for listed and unlisted stocks alike have suffered severely these last few months and the following list shows that the dullness has not yet abated. There seems an unwarranted lack of interest. Sales of the best of shares are light. The lesser desirable have almost ceased to be traded in. Several companies seem to have given up all life as far as trading is concerned. In San Francisco, Palmer continues to exchange hands, but not as formerly. Like other stocks it has suffered. Associated always demands some trading, but even Associated is lightly exchanged at present. Union holds up well at $99.75 asked, $99.50 bid, and sales made at the latter figure or thereabouts, in a small way. Premier has been very quiet, no quotations recently having been given. Peerless holds its own at $5.00. Illinois Crude is very low—unreasonably so, only 3 cents being bid at last reports. It might well be noted that it is the smaller companies, especially those affiliated with the Agency, whose shares have depreciated most. Following is our regular monthly list of San Francisco quotations:

Company.	Bid.	Asked.
Apollo		$ .03
Associated Oil Stock	$45.50	
Associated Bonds 5s		
Bay City		.60
Brookshire	.90	1.05
California Midway		.32
California Seaboard		
Caribou	.95	1.05
Claremont	.95	
Coalinga Mohawk	.44	
Coalinga National	.15	.16
Cons. Midway	.04	.05
Dominion		.85
Enos		.50
Illinois Crude	.03	.10
Maricopa National		.25
Maricopa 36		2.00
Mecca		1.50
McKittrick	.09	
Midway Premier	.35	.40
Monte Cristo		1.90
New Penn. Petroleum	.49	.50
Occidental	.15	
Pacific States Petroleum		.30
Palmer	1.17½	1.22½
Peerless		5.00
Piedmont		.05
Pinal		6.25
Producers'		
Pyramid	.40	.55
Record		7.00
Republic		.40
Rice Ranch	.50	
Sacramento	.48	
S. F. & McKittrick		20.00
Section 25	26.25	35.00
Shawmust		.75
Silver Tip	.90	
S. W. & B.	.20	.22
Turner	1.00	1.05
Union	99.50	99.75
United Oil	.55	.57
W. K. Oil Co.		2.90
Yellowstone		.08

Los Angeles Quotations

As usual Los Angeles displays considerable more lvliness on the oil exchange than does San Francisco. The following quotations, in comparison with those above, show the difference in the interest in oil stocks in the two centers of trading:

Company.	Bid.	Asked.
Amalgamated Oil	$45.00	$50.00
American Crude Oil Co.		.62
American Pet. Co. (pfd.)		75.00
American Pet. Co. (com.)	32.00	37.50
Associated Oil	45.12½	45.87½
Bear Creek Oil & M. Co.		.65
California Midway Oil Co.	.28	.32
Central	1.93	
Columbia	1.08	1.15
Consol. Midway Oil Co.	.05¼	.05⅜
Continental Oil		.35
Enos Oil Co.		.50
Euclid Oil Co.		.50
Fullerton Oil		4.50
Globe	.05	.06½
Jade Oil Co.	.21	.22
Mexican Pet., Ltd. "Pfd"		75.25
Mexican Pet., Ltd., "Com"	33.50	33.87½
Mascot Oil Co.		1.00
New Pennsyl. Pet. Co.	.42½	.50
Olinda Land Co. (Oil)	.40	.50
Palmer Oil Co.	.87½	1.10
Penn. Midway Oil Co.	.10⅞	.11
Pinal Oil Co.		7.00
Rice Ranch Oil Co.	.50	.75
Section Six Oil Co.		.10
Trader's Oil Co.	69.50	72.00
Union	99.87½	100.00
Union Provident Co.	99.62½	100.00
United Petroleum	99.62½	
United Oil Co.	.58	.62
Western Union	95.00	110.00
White Star Oil Co.	.18	
Yellowstone Oil Co.		.10
Non-Producers.		
Nevada-Midway Oil Co.	.11⅛	
Oleum Development Co.	.04½	.04⅝

PRESIDENT TAFT'S WITHDRAWAL

Order Stands

President Taft's September 27, 1909, oil land withdrawal order is legally binding, according to unquestionable authority. This means the total loss of time and hundreds of thousands—probably several millions—of dollars to corporations developing on Government withdrawn lands after that date. Full particulars in next issue. The "squatters" on the Boust property in Taft, Cal., have been denied all rights to their claims by the courts.

The Templor country is waking up again. Templor Ranch, Dillon, Shear, Sunshine, Kern Petroleum, Juanita and several other companies are operating there.

UNION TOOL COMPANY

Manufacturers of Up-to-Date

Oil Well Drilling and Fishing Tools

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BRANCHES

Moron, Cal. Coalinga, Cal. Orcutt, Cal.

Home Finding Season is here

LOW

SETTLERS FARES

IN EFFECT SEPTEMBER 15 TO OCTOBER 15, 1911, FROM THE EAST TO

CALIFORNIA

VIA

SOUTHERN PACIFIC

HERE ARE SOME OF THEM

From	
Council Bluffs	$25.00
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Prospective Outlets for California Petroleum

With a Review of the Present Conditions in the California Oilfields

By Paul W. Prutzman, Petroleum Engineer
Consulting Scientific Editor of the California Derrick

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The market for crude oil in California at the present time bears such a relation to the visible supply, that the most sanguine must admit a very serious overproduction. Not only this, but the late period of active development, while it brought no entirely new fields to notice, so greatly extended those already known as to cause grave doubts on the likelihood of the present production rate being much diminished for some time to come.

All who have track of the results of the wild-catting done within the two years past will probably agree that, beyond the territory now demonstrated to be productive, there are other considerable areas which are very hopeful indeed. And it is more than probable, indeed almost certain, that with the renewed impetus to prospecting which would be given by even a very modest advance in price, some at least of this territory will be proven up and added to the producing list.

Artificial means for sustaining prices, through curtailing production, have been tried, and in the main found wanting. For not only is any close organization prevented by the laws concerning trusts and restraint of trade, but also the number of individual companies is large, their interests very divergent, and the strength of the smaller producers insufficient to withstand the strain of artificial curtailment. So that while such organizations have developed an admirable spirit of co-operation, and have served a very useful purpose in consolidating and systematizing the industry, they can hardly be considered a success in their main object, which was to remove or minimize the effects of a continued excessive production.

It follows as a matter of course that in a case where the supply of an article exceeds the demand, two courses are open, one to the individual producer, the other to the industry at large. The only hope of the individual producer is to so reduce his costs so as to continue his business at a satisfactory profit, under market conditions as he finds them. On the other hand the interest of the industry as a whole lies in seeking every possible extension of market, meaning by this, not the effort of the individual producer to increase his sales, which he makes as a matter of self defense, but which is usually successful only at the expense of some other producer, and is of no value to the industry as a whole. What are here referred to are such efforts as tend to an actual increase in the quantity consumed, efforts which, while they usually benefit the individual to some extent, must almost always bring equal benefits to others, and are therefore largely altruistic.

When, in the year 1902, the price of oil had sunk to an unprofitable level, owing to a very heavy over-production, the most strenuous efforts were made, by all who had oil to sell, to induce the users of coal to supplant that fuel by oil. And while these efforts were attended by a great deal of throat cutting, and did not save many of the smaller producers from extinction, they did result in the entire replacement of coal by oil as fuel on the Pacific Coast. So that while in 1901 the market was flooded with unsold oil, with a production for that year of 7,710,000 barrels, five years later, with a production of 32,624,000 barrels, a shortage was apparent. From this experience the producer learned (or should have learned), that the way to get rid of a surplus production is, not to curse the Standard and the railroad, but rather to hustle out and find a market—or make one.

We are now brought face to face with much the same condition which prevailed nine years ago. For while, on the one hand, the industry is much better organized than it was in those days, is more strongly capitalized and much better managed, yet on the other hand, at that time a very large tentative market did exist which has since been occupied. And when conditions are carefully examined, it appears very doubtful indeed whether any made to order market now exists to reward the most diligent search.

No one will deny that the market for fuel oil on the Coast, so far as stationary plants are concerned, is completely filled, and the only possibility for extension of this market is in connection with the gradual growth of local manufactures, too slow a process to be of much aid in the present situation. So far as steamships are concerned, the possible demand for oil is not yet quite filled, and we all look for a very considerable extension of this business within the next few years. But the immediately available trade, that of the coastwise vessels, is supplied, and those making Asiatic runs cannot use oil to advantage until supplies for the east-bound trip are provided, which puts this possibility some distance into the future. As to railroads, the state of the case is about as with stationary plants. The local lines have extended their use of oil as far east as transportation conditions will permit, and judging from the action taken in 1906, when oil temporarily reached a high price, it may well be believed that with a rising market the increased consumption of the lines within the state would be at least offset by the withdrawal of oil from the more easterly extensions of these roads.

Leaving, then, the question of local fuel market, it will be apparent that to take care of the present and prospective production of our fields, we must either seek markets already untouched, and hitherto considered beyond our reach, or failing these, must **create a demand not now in existence.**

So far as existing markets are concerned, we have three possibilities, as follows:

The placing of fuel oil in distant markets.

An extension of the light oil refining industry.

An extension of the markets for the refined or semi-refined products of our heavy oils.

As to the placing of fuel oil outside of our local market, which may be taken to include the coast and central valley of California, and the coast of Oregon and Washington, we have certain possibilities in extensions by rail to the eastward, and by water to the Atlantic or Gulf sea-board. As to the first but little need be said—a glance at the distances over which rail hauls must be made, and at the scattering population of the States to our east, will show how hopeless this territory must be as the locus of any extensive fuel oil market. As our freight rates, always high on tank car shipments, increase to the east, the haulage on Utah, Wyoming and New Mexico coals diminishes, and it is highly probable that our product has now advanced as far in this direction as it will ever go with present methods of transportation. And so far as pipe-lines are concerned, no one who has investigated the actual workings of such long distance California lines as carry heavy oil will consider for a moment the feasibility of such a project as a line reaching east of the Sierras.

The Atlantic sea-board and Europe offer very large markets for fuel, but the possibility of competing in such markets seems very dubious. The enormous quantities of low priced coal

available at such points, the great cost of the necessary distributing stations, and the high freights due to an ocean haul which, even by way of Panama, is upwards of five thousand miles to New York, seem to render the placing of oil in competition with coal quite out of the question. And so far as the Gulf States are concerned, the nearer Mexican oil, and the residuums from Texas and Oklahoma refineries, will probably supply all such demand as is willing to pay an added price over that of coal.

Considering the fuel oil market alone, it hardly seems possible that the demand for our oil will be materially increased other than by the comparatively slow growth of local consumption, and even that will be seriously hindered by any price much above 50 cents at the well, a price at which coal just begins to compete.

The light oil refining industry in this field is restricted, not by the market for products, but by the supply of suitable crude. A small area in Coalinga, a few wells in Midway, the little Puente group, part of the small area of Ventura, and the declining fields of Salt Lake and Santa Maria, furnishes all the present production of this grade of oil. And aside from Coyote and San Emidio, there is not at present in sight any prospective production, either new or in the way of extensions, to offset the inevitable shrinkage in the older producing territory. The prospects are, at present, all for a higher rather than for a lower price for the volatile crudes, but so long as gasolines are, as at present, the elements giving value to these oils, a higher price for refining oil will not in any way relieve the situation for the producer of the heavier grades.

The refining of heavy California crude is quite different from that of other oils, either here or elsewhere, both in methods of handling, in the products gained, and in the markets available to these products. Our own light oils are refined mainly for their gasoline, leaving a residue of fuel oil, only the strongest refiners going into the manufacture of kerosene, which is not of the best quality, and requires a considerable sales organization for successful marketing. Eastern oils are usually refined for the kerosene and lubricating oils, both of which are of the highest grade and therefore readily salable. The heavier oils of Russia, which strongly resemble our own in many respects, are refined for kerosene as a main product, there being a large Oriental demand for this article, with a fuel residue and a certain proportion of fairly good lubricants as by-products.

Our own heavier oils, by which may be taken oils below an average of 18 degrees Beaume, are unique in two respects, in containing no light products whatever, and in giving a residue of asphalt of the best quality. The lubricating oils, which in common with most other crudes they contain in considerable proportion, are of fair quality only. The fact that, with the exception of Cuba and Mexico, neither of which has yet any important established production, California produces the only oil yielding a **true asphalt**, can hardly be too much emphasized, and it is not an exaggeration to say that **the heavy oil refining industry of the State is based solely on its output of asphalt.**

The total output of petroleum in California for the year 1910 was 78,000,000 barrels, of which 19,000,000 barrels or 24 per cent was light refining oil, i. e., oil containing more or less gasoline, while 57,000,000 barrels or 76 per cent wa sheavy oil, not refinable except for lubricants and asphalt. Just how much of this latter oil went into storage, or in other words, how much the production was in excess of the demand, would be difficult to determine, but it is altogether probable that to bring about any permanent and important increase in the price of this grade of oil, it would be necessary to increase the consumption by not less than ten million, and from this up to fifteen million barrels per year. We may assume that the consumption of fuel locally would remain stationary under an increasing price, by which is meant that the natural growth of consuming capacity would be about balanced by the shrinkage in some quarters due to an increase in the price of crude to say 60 cents at the well. This assumption would be impossible to justify by figures, but is probably not far from the general truth. If, then, it is true that outside markets for crude in large quantity are out of our reach, even at present prices, it will be evident that any large increase in consumption in this grade of oil in the immediate future must be brought about by a very large expansion of the heavy oil refining industry, either in its present form, or by the creation of markets for a new product or products.

The refining of heavy crude, as at present carried on, gives us three products, in various proportions depending on the quality of the oil handled. There are, a top distillate, ranging in gravity from 30 to 24 degrees Beaume, and at present useful only as fuel, or for gas manufacture—a lubricating fraction ranging around 20 degrees in gravity, and capable of further division into many grades of lubricating oils—and asphalt.

The proportion of the so-called fuel distillate in our heavy asphaltic oils varies from 20 per cent to as high as 50 per cent. The lightest portion of this oil finds a limited use for such minor purposes as fuel in household burners, thinning paint, and as a solvent, but so far as any large quantities are concerned this oil is, at present, useful only as a substitute for crude oil as fuel or for gas manufacture. For the first purpose it is the equal of crude, but in the ordinary has no advantages, and it must, of necessity, be marketed at a price which is very low for a manufactured product. For the second purpose it is, in most cases, superior to any crude oil practically available, and in all cases it is superior to the crude from which it is made. This market, however, could not possibly stand a price more than very slightly in advance of that of crude fuel oil, so that while there are prospects for a very large market for such an oil, when the gas companies finally learn its advantages, this market will be at or near the price of crude, and in occupying this market an equal amount of crude will be displaced.

It is quite possible that a new use for this fraction of our heavy crudes is being created by the development of certain forms of internal combustion engine. The demand for the light gasolines, which are used only in small engines, shows how large such a market may become, and this market could readily tolerate a price of a dollar a barrel, perhaps even more, for its supply. While this type of engine is but lately perfected, and has not yet come into general use, there are good prospects that it will soon be consuming enough of this class of distillate to have a marked effect on the price.

Whether this increased consumption will be at the expense of the demand for the heavier gasolines, such as engine distillate, cannot now be told. Probably it will be found that this power will create a new place for itself, and effect neither the steam engine nor the gasoline engine in any marked degree—the latter particularly, as the principal consumption of engine distillate has always been in small units, while the new heavy oil engine has, to the present, been most successful in the larger sizes.

The prospect for an increased demand for our lubricating oil is still a matter of doubt. For while the markets of perhaps half the world are open to us, these oils being sufficiently valuable to stand a high transportation charge, we must admit that this branch of the industry has not, in the late past, made any great progress.

That this is true, is unquestionably due in part to the difficulty of marketing such goods, and the strong organization necessary to success, confining this trade to the heaviest operators. In part it is due to a prejudice among consumers which causes them to reject an oil of unfamiliar appearance. But it must be admitted that a partial reason for the slow growth of the California lubricating oil trade is found in certain real drawbacks to the use of some of our oils, and the still more important fact that the producers of these goods, have, in general, insisted on denying or overlooking these effects thus casting undeserved discredit on their entire output. Whether this be due to perversity or to ignorance on the part of manufacturers, there is no question that the effect on the industry as a whole has been extremely unfortunate.

The manufacture of lubricating oils at a profit requires a heavy investment, partly because a really satisfactory line of goods can be made only when working on an ample scale, but mainly because in the selling of such goods a very effective sales organization is required. Lubricating oils differ from the lighter petroleum products in one very important particular, in that while gasoline and kerosene, for instance, have applications which are perfectly well known and understood by the user, and are of fairly even quality as turned out by different refiners, the selection and use of the proper lubricating oil for any given purpose are subjects of which the ordinary user, and

it must be admitted, the ordinary refiner, are densely ignorant. So that when a new line of these goods, differing in any important point, but particularly in appearance, from the standard article, is offered to a new market, a great deal of expensive missionary work must be done. And even where such a line is sold in quantity to retailers, the persuasion and instruction of consumers must fall largely on the manufacturer, the retailer being both unwilling and unable to introduce unknown goods by his own efforts. It will be found quite impossible to work up a large trade in such goods in a new market without such a campaign of education, and as, while profitable in the long run, such a campaign is prodigal of both time and expense, it is probable that this branch of the industry will never be a notable success other than in the hands of manufacturers able to stand the cost of extensive and long continued advertising.

As to the quality of our oils, but little can here be said, though there is need for a very full and frank discussion of this subject. The question of the ultimate or possible merits and demerits of our oils is so confused with the subject of the proper refining methods, that it is rash to be too positive in any assertion. But it will probably be found, in the long run, that for such uses as call for much chemical stability, our oils will always be found defective, but that for uses which do not demand great permanence, our oils are equal to thebest, and at some points much better than the average from other sources. The first classification bars from the best markets all cylinder oils, and also oils for situations where so-called "saponification" is objectionable. In other words, the ultimate chemical constitution of our crude is such that cylinder oils produced by any feasible process will always have a strong tendency to decompose in use, and the tendency to emulsification, which also seems to be inherent in the chemical make-up of our crude, will be a bar to the manufacture of many special oils. For the lubrication of high speed machinery, and for the compounding of such oils as "castor machine," our oils seem entirely satisfactory when properly refined, and it is probable that most or all of the difficulties experienced in the past with these lines have been due to careless or ignorant manufacture, and that such difficulties will disappear as knowledge of our oils advances. For heavier cold lubrication, covering that large and important class of products known as engine oils, our products have few equals in the essential points of viscosity and lubricating power.

In marketing our oils in Great Britain and on the Continent, the California refiner will enter a market already highly standardized. Largely through the efforts of the Scotch shale oil producer, consumers in these countries have been accustomed to buy on a specific gravity basis, each given weight corresponding, with oils of given origin, to certain understood viscosities and flash points. In entering such a market it will be necessary to conform, as closely as may be, to current practice in these respects, but this done, our oils will still vary considerably from the standard article in properties, and still more in appearance. This variation has, as said, a strongly retarding effect on the introduction of new oils, and will need to be overcome by persistent effort on the part of our producers. It must not be forgotten that in our own local market, with every advantage as to price, our oils have not succeeded in entirely displacing Eastern goods, and while this is due in some part to thesale of quantities of carelessly prepared oils during earlier years, and to some extent to the failure of our crudes to produce a complete line, yet it is fair to suppose that it is due in larger part to the continued ignorance on the part of consumers of the real merits of California oils. And this in spite of years of effort on the part of our larger manufacturers to introduce the local article. So it would appear that, while years to come will undoubtedly see a very large demand for fornia petroleum ranges from 20 to 45 per cent, inclusive of the entire available supply, yet without some united effort there is little likelihood of such an increase in the near future as will effect the price of our crude.

The proportion of lubricants in the ordinary heavy California petrolenm ranges from 20 to 45 per cent, inclusive of losses, which, perhaps, average one-fifth of either amount. This loss being wastage in process of manufacture, is not deducted when this portion of the oil is used for other purposes. Except under the conditions outlined above, this portion of the crude must at present be considered only as fuel or as gas-making oil, either alone or mixed with the first fraction.

The asphalt market is the mainstay of the heavy oil refining industry, and in every case where this grade of oil is refined, asphalt is the principal product in point of value. Indeed, in all but the rare cases where lubricating oils are made, asphalt is the only product having a value materially greater than that of the crude.

The effect of this condition cannot be other than unfortunate, as where an industry depends for its existence solely on the sale of a single product, and that a product so fluctuating in demand and value as asphalt, its history must always be one of periods of prosperity alternating with times of extreme depression. The heavy oil refining industry will never be in satisfactory condition until the output of our plants is extended by at least one other readily saleable and profitable product which, even though it may show a smaller profit per barrel than asphalt manufacture, will enable our plants to run continuously, during the summer months, and during periods of stagnation in the asphalt market.

The demand for solid paving asphalt (and it should be noted that this term does not include the liquid grades used in highway construction), has increased enormously during late years, but has probably passed the period of its greatest expansion. The reason for this is not far to seek. Fifteen years ago the sheet asphalt pavement was a luxury; today, through the combined efforts of the producer and the larger contracting firms, aided by its great intrinsic merit, this type of pavement has become the standard in every city. This relative expansion of the business has been conterminous with a phenomenal growth in the size and number of Amercan cities, and thus the demand for asphalt has increased at a rate probably never exceeded in any industry.

While the growth in the size and wealth of our cities still continues, and is likely to continue for an indefinite time, it is probable that the relative rate of growth has reached its maximum, and will in future be much diminished. That is, while in the past few years our cities have grown by an actual and very large migration from the rural districts, there are good indications that this tendency has been checked, and that in future our cities will grow only in proportion to the increase of total population. A different cause leads to the same effect as regards the demand for asphalt. This demand has grown in the past by the creation of an entirely new industry, but now that this type of pavement has been so generally standardized and adopted, further growth in demand will be in proportion only to the further growth of our cities. For sheet asphalt pavement is, even aside from the cost of the asphalt, so expensive a construction, that it will probably never be used to any great extent outside the centers of wealth and population.

So far as California asphalts are concerned, it would seem that, aside from the natural growth of the demand, which in future will be at a slower rate than formerly, our only hopes for a materially greater output lie in displacing other asphalts now sharing our market. Unfortunately for us, deposits of natural asphalt are very numerous, and hardly any portion of the asphalt using world lacks an available supply of the crude material. Europe has extensive deposits of bituminous limestone, which, while useless as cement, furnish a paving material of the best quality. Western Asia has important occurrences of soft asphalt which, under more stable political conditions, would undoubtedly be largely worked. The Eastern States of America have, beside some deposits of bituminous rock, the readily available and very large pitch deposits of Trinidad and Venezuela. Further, the asphaltic oils of Mexico and Trinidad, and later, we can hardly doubt, of Cuba, Syria, Persia, and possibly British Columbia, will claim their share of the market. So that it is extremely likely that in future the recognized merits of our output and the best efforts of our producers will no more than suffice to hold such proportion of the market of the world as we now have.

This is considering solely the demand for asphalt for paving purposes, this use constituting the bulk of the present demand. For this purpose our oil asphalt, at first looked on with suspicion, has proven itself the equal of any of the natural materials, but it has not shown any such marked superiority over the best of these as to justify a higher unit price. For other

uses, as a cement, in varnishes, and for the manufacture of roofing materials (a very large and growing market), our asphalt competes to less advantage, as for the first two uses it is hardly the equal in durability of the best natural bitumens, and for the latter is largely crowded out by coal tar products, of lower cost, and in general of somewhat greater adaptability.

The demand for asphalt for paving purposes is capable of almost infinite extension, and is limited only by the price. For while the sheet asphalt pavement is, as said, an expensive article aside from the cost of the asphalt, simpler forms of bituminized macadam pavement are much less costly, and will without doubt come into very general use as the price of the bitumen is decreased, and particularly as the public are convinced that such pavements are really economical and desirable. In fact, the latter is the main point, and were it once established, as the merits of the sheet asphalt pavement have been, an enormous demand would at once be created even at present prices.

It will need no figures to show that the maintenance alone of the main roads of the United States would amply suffice to consume every barrel of asphaltic oil produced in California. And bizarre as the suggestion may seem at this time, there is some likelihood that a few years will see our entire output of this grade of oil used for this purpose. Such a consummation—one devoutly to be wished, as it would enable the producer of crude to realize a much more satisfactory price for his output—awaits only the working out of the most desirable road construction methods, and the elimination of the excessive package and transportation charges which are such a burden on the solid asphalt industry.

That the first is the principal requisite is shown plainly enough by the history of road oiling in California, where in spite of years of experience, with an ample supply of cheap materials, the term "oiled road" still suggests a succession of sticky, rubbery bumps rather than the hard, smooth and highly tractile surface which the occasional section of properly constructed road exhibits.

As to price, the asphalt industry is peculiar in that the proportion of the final cost of finished product chargeable to transportation and packages is entirely out of proportion to the original cost of the material sold. This disproportion is so great that any probable reduction in the cost of materials or of manufacturing is insignificant compared with a material reduction in transportation cost.

For instance, we will say that to manufacture a ton of asphalt requires five and six-tenths barrels of oil (including fuel, and deducting distillate recovered). At 40 cents per barrel this would be $2.24 for material. Add $1.00 per ton for labor and maintenance, and the total net cost of asphalt in cooler is but $3.24 per ton, assuming that distillate is sold for the price of crude.

The cost of the ordinary slack barrels for solid asphalt, including cooperage, is not far from $4.00 per ton. Add to this 50 cents per ton for labor in barreling, and for warehousing during the storage season, $12 per ton, the minimum freight to Eastern common points, and $1.00 per ton for unloading, storage, and cartage to the job, and we have a total of $20.75 as minimum consumers' cost for a material costing but $3.25 to manufacture, and this making no allowance for profits.

Now, if we could, by preparing this material for shipment in bulk, do away with the package charge, we would at once take away $4.50 at this end, plus about half the manufacturing cost, and say half the cost of handling by the consumer. The freight, on a basis of the same ton rate, would be reduced by 7 per cent, this being the average weight of dead stock in a gross ton of barreled asphalt. In all we would cut the cost to the consumer not less than $6.34 per ton, or say 30 per cent of the present cost, exclusive of profit.

This reduction in cost of material, however, is a minor consideration as compared to the reduction in total cost of road construction which follows from the intelligent use of liquid asphalts with macadam materials. All who are familiar with asphalt pavement work are familiar with the complication inseparable from proper handling of this construction—the forming up of a concrete foundation, the preparation of a cushion course of one class of materials and a surface layer of another class, the collection of many varieties and sizes of materials, almost always calling for some from a considerable distance, the grading, screening, measuring, mixing, heating, and rolling required, all making for a heavy and expensive plant, with attendant transportation and upkeep costs, and corresponding profits to the contractor.

The use of liquid asphalt in road construction calls for but slight extension of the simple plant needed by every builder of macadam roads, and can thus be carried out by the smaller contractors—a most important point to the seller of the material. The conditions surrounding its use are such that a liquid asphalt containing as little as 60 per cent of the solid grade is, in practice, nearly or quite equal in effectiveness to an equal weight of the solid as applied in sheet asphalt paving. And under reasonably favorable conditions as to supply of rock matrials, roads almost equal to sheet asphalt pavements in appearance and smoothness, and fully equal if not superior in durability and ease of traction, can be constructed at a cost so low as to make them entirely feasible for use as the main highways of even the least populous sections.

To bring about such extended use of these constructions as will promote the prosperity of the asphalt industry, and enhance the value of our heavy oils, calls for three energetic moves on the part of the organized producers and refiners of this field. The first is to demonstrate, by working examples on our own roads, that such methods are a practical success, an undertaking toward which we have so far made but moderate progress. The second, having constructed such examples, is to give their merits and their cost the widest possible publicity, both through the general press, and through technical publications. The third, and the most important of all, is to systematically study the conditions applying to road building in various parts of the country, and the means by which oil can be successfully applied under each set of conditions.

This last is a very large contract, for unlike sheet asphalt paving, road building cannot be carried out according to set rules, but must be infinitely varied to suit the conditions of soil, climate, drainage and rock materials available. But it is a labor which must, in part, fall on the oil producer, unless he wishes to wait the slow natural evolution of the art. At present the technique of oiled road building is so little understood by the engineering profession that, in many cases, the highway engineer will disregard bituminized roads, either from ignorance of their real merits, or through fear of experiments with unknown materials. But once given the encouragement of a few really successful roads, and the benefit of even a moderate amount of careful construction and cost data, the engineering profession will be found very ready to adopt and perfect these new methods, bringing to the problem the energy and ability which have made such a striking success of American street paving methods.

The suggestions (for which we make no claim of originality) outlined in the above paragraphs, point to a market quite capable of absorbing, not only the excess oil, but all the oil of the California fields. And however much the optimistic portion of the press may declaim as to warships and pipe-lines, the fact remains, as every dispassionate observer is aware, that the present local fuel market is supplied, and those at a distance more or less visionary; that the light oil refining industry already consumes the entire supply of suitable crude—and that the market for the sole product of our heavy oil plants has about reached the limit of expansion. So that unless we wish to wait and grow up with the country, a slow process, involving in all probability a long period of stagnation and low prices, it is incumbent on us to carefully investigate every suggestion looking to new markets, and to act with energy along all lines offering ever a chance of success.

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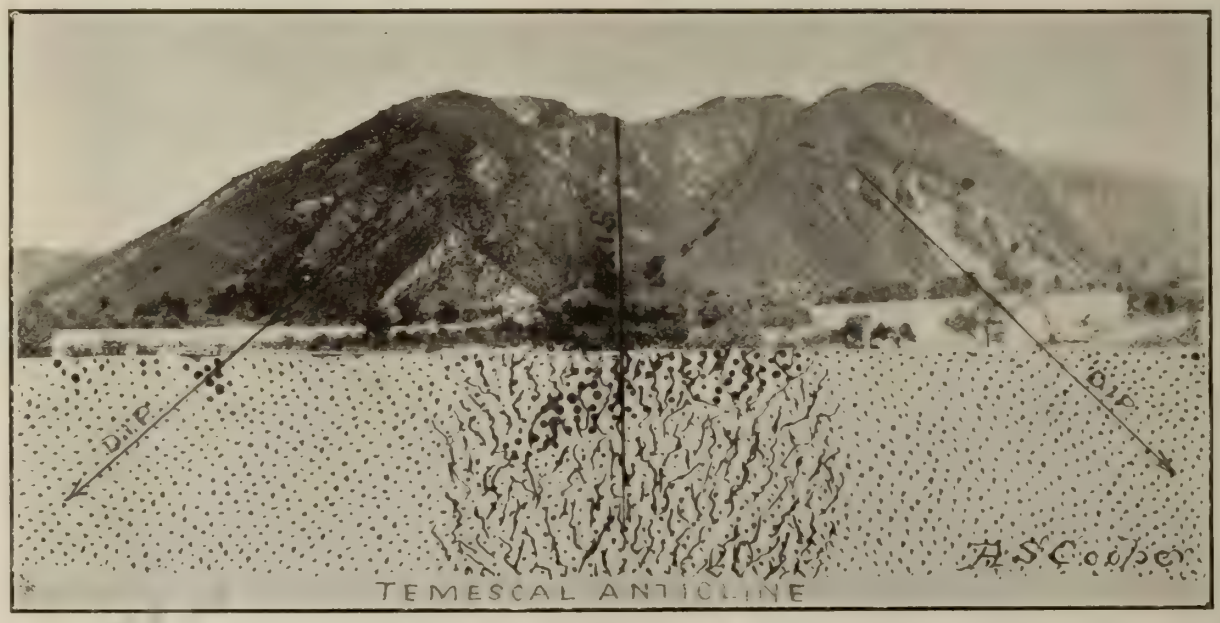
DESCRIPTION OF AN ANTICLINE

By A. S. Cooper, E. M.



The figure herewith shown, a part of which is an actual photograph and the remainder being a diagram constructed by the writer, displays a cross section and view through the Temescal Anticline on the Piru Creek, Ventura County.

This anticline is bent so acutely near its axis that the sandstone of which it is composed has been broken to such an extent as to permit the erosion of its apex so as to form a V shaped gap. The bending of this anticline has produced fissures in the cemented sandstone through which petroleum and natural gas has ascended, and is still ascending from petroliferous shales and sandstones.

Seepages of petroleum exist near the axis of this anticline. The anticline's structure and appearance would indicate that it was uplifted by pressure exerted on underlying molten rocks and not by lateral pressure on the sedimentary rocks; the heated molten rocks having distilled carbonaceous and bituminous matter, producing natural gas and petroleum. If a well were to be drilled deep enough near the axis of this anticline to reach the underlying petroliferous sandstone and shales, or if a fissure were to be encountered while drilling, petroleum and natural gas should be obtained.

That petroliferous shales and sandstones underlie the exposed sandstone comprising this anticline is shown where this sandstone is eroded.

In future papers many other structural forms of anticline and their influence on the accumulation of petroleum will be shown and explained.

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Secondary Distillation in Nature

The Origin of Petroleum Oil and Natural Gas

By A. S. COOPER, E. M., Ex-State Mineralogist of California; Contributing Scientific Editor of the California Derrick

Soluble Silica Shales

The insoluble silica of ordinary shales is converted to soluble silica by hot alkaline solutions which escape from faults and fissures. After this conversion portions of the soluble silica are carried away with water and the remainder is left in a pulverulent state called soluble silica shales. They are also called diatomaceous or Monterey shales.

Soluble silica shale has a great power of absorption. Its specific gravity is about 0.825. When saturated with water it has a density of 1.24. After calciming its specific gravity is increased about 40 per cent. This excessive porosity, together with its hardness and extreme fineness, gives the earth its economic value.

The adhesion of the particles of the soluble silica shales is slight and the shales can be crushed to an impalpable powder between the fingers. When rubbed on glass it does not produce scratches; on the other hand quartz cannot be ground sufficiently fine to prevent it scratching glass when rubbed on it. Soluble silica shales are freely soluble in hot caustic potash solution. Insoluble shales are but slowly attacked by these hot solutions. The white color of these shales makes them very conspicuous and formations of them can be seen from a long distance.

These soluble silica shales consists of snow white pulverulent silica, the residues of the decomposition of ordinary shales by solfataric waters.

When an alkaline solution is heated silica is attacked and an acid silicate is formed which, upon decrease of pressure or cooling, separates out. If the temperature at which deposition occurs be above 180 degrees C., the silica separates out as quartz; below that point as chalcedony, while at ordinary temperature of the air it separates in the form of a pulverulent hydrated mass, soluble silica shales.

If the pulverulent silica in these shales was deposited from a state of suspension in water it would have made a rock as dense as ordinary shale and would not have had the porosity of soluble silica shales; consequently, these shales must have been altered after their deposition.

In places the fustules of diatoms are abundant, especially in the cracks and seams. These diatoms probably originated in the shales after deposition, the same as they do at the present day in the warm siliceous water of springs.

Soluble Silica Shales and Diatoms

A sea swarming with diatoms would probably deposit a homogeneous rock as far as diatoms were concerned. It is found, however, that between seams filled with diatoms are intervening parts from one-fifteenth to one-eighth of an inch thick consisting of pulverulent soluble silica with impurities but no diatoms. Immense areas of the soluble silica shales are to be found that contain no diatoms but in many cases where the diatoms are absent, contain a small amount of bitumen.

Description of Figure No. 3

Figure No. 3 is a piece of soluble silica shale. Its striped appearance is owing to parts of the shale being bituminized. If the bitumen originated from diatoms the diatoms must have been very numerous in the dark parts and absent from the lighter parts.

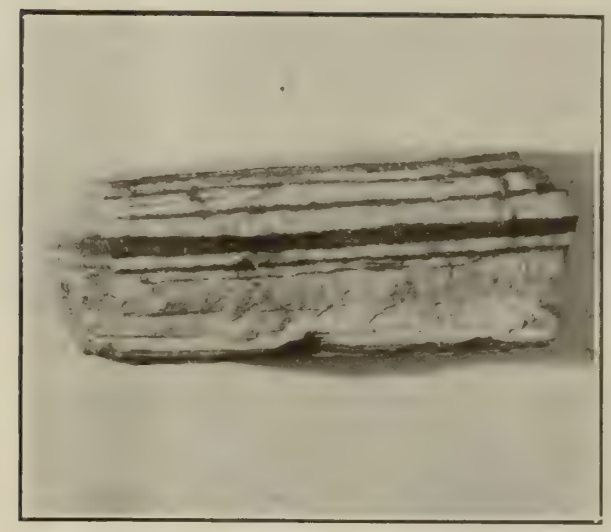
As soluble silica shales nearly always occur near fissures through which hot alkaline solutions, petroleum oil and natural gas have ascended, they are to a certain extent an indication of petroleum oil. Bitumo-silicified shales are nearly always overlain by these shales, the hot alkaline waters which assisted in forming the bitimo-silicified shales forming the overlying soluble silica shales.

Gravels and Sands Acted Upon by Alkalines

Pleistocene gravels and sands that have been washed from the San Rafael mountains in Santa Barbara County are whitened when they overlie soluble silica shales, showing that the same alkaline solutions that leached the underlying shales also acted on these gravels and sands.

The shales on one side of a fissure through which alkaline solutions circulate will be soluble silica shales, whereas the other side where hot alkaline solutions do not circulate will be ordinary shales. Often one dip of an anticline will be soluble silicia shales and the other ordinary shales.

Soluble silica shales occur in the ancient river beds of the Sierra Nevada, California, lying beneath lava which has filled them. These shales resemble in all particulars the soluble silica shales of the Coast Ranges except that they contain no diatoms. These shales are the result of hot alkaline solutions. Water percolating through hot lava became charged with caustic alkaline and entering the old river beds in which fine quartz sand had been deposited, changed the insoluble silica of the sand to soluble silica and deposited the latter in a pulverulent condition. The present silica in the beds of the Sierra Nevada do not contain deposits of soluble silica for the reason that the quartz



sands in them have not been subjected to a hot bath of alkaline water.

Gold Coated with Silica

In the ancient and buried rivers of the Sierra Nevada fine gold is found coated with a thin film of soluble silica, which can be removed by boiling it in a solution of caustic potash. The same character of gold can also be found in the beaches and in the streams of the Coast Ranges. In all probability this gold was coated by siliceous solutions.

Presence of Bitumen Accounted For

The bitumen in the soluble silica shales has been partly derived from the secondary distillation of the bituminous matter in the bitumo-silicified shales, which probably entered them in a vaporous state and condensed. There is a vast amount of soluble silica shale where the cracks, seams and joints are filled with asphaltum. In such parts of the shales where such cracks and seams do not exist, no asphaltum or bitumen is to be found. If these shales are split, exposing parts that do not contain bitumen, numerous diatoms are found, which, however, is barren of bitumen. It is a significant fact that when the matrix of diatomaceous shells are bitumenized, the shells are bituminized and when the matrix is barren of bitumen the shells are also barren.

All calcareous shells have been leached from these shales and the molds thus formed are frequently filled with asphaltum or iron oxide. The asphaltum must have entered these molds in a vaporous or liquid state in order to have passed through the small spaces in the shale. After the entrance of the bitumen it was changed from a liquid to a solid state.

Casts and Molds in Soluble Silica Shales

Many casts and molds of fossils and calcareous shells are found in the soluble silica shales, but not the shells themselves, they having been removed by percolating waters. When the shales are bituminized the casts of the shells in bitumen are found. The vertabrae of fishes, the crusts of crustaceans, the skeltons of birds, the calcareous shells of mollusca and numerous other evidences of former life are to be found cast in bitumen in the soluble silica shales which have been bituminized on the Jesus Maria Rancho, Santa Barbara County, and elsewhere. Seemingly the animals died and their fleshy parts removed by decay. Their harder parts, containing lime, were embedded in a fine mud; subsequently these remains containing lime were removed by percolating waters, leaving a perfect mold. These molds were then filled with oxide of iron, but more frequently with bitumen. The black bitumen shows out very fully and distinctly against the light brown shale.

Jewell Oil Company

Work has been resumed on the properties of the Jewell Oil Company in the Kern River field. Superintendent George Betts was in San Francisco recently and states that from the nine wells on the property a production of 4000 barrels may be expected in their present condition and with some improvements he thinks this production can be increased.

Ventura Oil and Development Co. Operations

W. C. Daniel, field manager of the Ventura Oil Development Company, left San Francisco about the 20th inst. for Piru to resume operations on the company's property at that point. The company has a 640-acre lease on which there are two wells. One at a depth of 900 feet and the other about 1600 feet deep. Work is to be resumed on the deep well where it is expected to encounter the Modello oil sands within the next few hundred feet of driving. The oil of this immediate locality is very high gravity, being marketed at as high as $1.50 per barrel. The Ventura Oil Development Company also operates at Newhall. They have nine producing wells at this point yielding about 2000 barrels per month.

On October 15th the Elk Horn Oil Company, operating on Section 25, 32 23, Midway, paid their first quarterly dividend, amounting to 3 cents per share for the quarter or 12 per cent per year. The Elk Horn will continue dividends until further notice, but will not increase production, having temporarily ceased development work. On the 13th of November the annual meeting of the shareholders for election of officers and transactions of such other business as is necessary will be held. The Elk Horn shareholders are to be congratulated for the efficiency of their present officers and the general policy pursued by them to this time.

President Taft has made another withdrawal of possible oil-bearing lands not far from Lost Hills. We have lost track of the acreage now withdrawn so cannot give same.

The United States Refining Company of California is to build a refinery near Los Angeles tide water during the coming year according to a news dispatch. It is stated that the cost of the new refinery will approximate $750,000.

The Los Angeles Gas and Electric Company lost the suit they had instituted against the Amalgamated Oil Company for a breach of contract, it being held by the court that both companies had broken the contract and the plaintiff company had done so first. The suit was due to the Amalgamated's deliveries of oil under a somewhat complicated and easily-to-be-misunderstood delivery contract.

Many small oil companies leasing their property are forced to drill it in, in compliance with the terms of their lease, thus having to produce oil whether or not they wish to, or can sell; thus the greed of the property owner who will not waive the letter of the contract is the direct means of reducing his own income by causing overproduction, which in turn causes either smaller sales, no sales at all, or sales at reduced prices. It looks like a case of killing the goose that lays the golden eggs.

Interesting Statistics

The combined value of the mine production of the gold, silver, copper and lead output in California in 1910, as given by Mr. Chas. G. Yale, of the United States Geological Survey, totaled $27,020,405, or approximately $10,000,000—(possibly $10,500,000)—less than that of the petroleum output of the "Golden State." Should not the latter name be changed to the "Petroleum State!"

Will Test California Oils

Under the direction of Dr. C. G. Cottrell, Ph.D., formerly of the University of California, an exhaustive series of tests of every kind of oil produced in California is shortly to be made by United States Government chemists.

Dr. Cottrell has charge of the California office of the Bureau of Mines, which has just been established here. The new laboratory of the California division of the bureau is located in the Appraiser's Building, San Francisco, and has been fitted out at considerable expense by the Government, being one of the finest chemical laboratories, from every standpoint, on the Pacific Coast. The first work to be undertaken will be with relation to smelter fumes. After this will come the fuel oil tests, which will be conducted by a number of expert chemists. No idea has been given us as to the length of time required to conduct the tests. When they have been completed a bulletin will be issued describing the work in detail.

California Production for and Field Operations During September, 1911

Production

The combined production of the various oil fields of California during the month of September amounted to 7,291,254 barrels of oil, a gain over the August production of exactly 82,270 barrels, as shown by our August figure,—7,208,984 barrels. This increase over August is entirely accounted for by the Midway field, which produced in September 175,255 barrels more oil than in August, the exact figures being: September, 2,132,651; August, 1,957,396 barrels. While Midway was thus raising the production record of the previous month, due to some sensational gusher production, Coalinga dropped very slightly in production, totaling 4954 barrels less in September than in August, when theoutput was given as 1,583,884, the September figure being 1,578,930 barrels.

Consumption

The total consumption of all California oils for the month of September amounted to 6,369, 518 barrels. The August total consumption was 6,406,115 barrels, which would make a drop in consumption apparent; but, the actual daily consumption during September increased 5669 barrels over that of August, and the apparent discrepancy is due to the fact that August has 31 days, while September has but 30 days. The daily consumption figures for the two months were: September, 212,317 barrels; August, 206,648 barrels. A nice showing, from the viewpoint of the producer.

The average daily surplus did not decrease; it increased—from 25,898 barrels surplus every day in August there was an increase in storage during September of 4827 barrels, making the total stored away daily in September 30,725 barrels. So the increase in consumption is within a thousand barrels of being offset by the increased storage.

The total amount of oil in storage is now 40,758,837 barrels. Last month (August), it amounted to 39,837,101 barrels; thus it will be seen that the "million-a-month" surplus is almost maintained; the exact increase of stocks during September amounted to 921,736 barrels, lacking but little less than 78,000 barrels of the monthly proximate million-barrel surplus rolling up.

Well Work in Fields

There were 101 more wells producing during September than during August. The figures were (as shown in table): September, 5098; August, 4997 wells. This month (September), there were thirty more wells producing in Kern River than last month. Figures, September, 1636; August 1606 wells producing. Midway gained thirteen wells producing in September, the August number being 481, making September register 494 producers. McKittrick gained three, from 183 to 186. Sunset had 204 producing during September; 216 during August; 12 off-production, two of which were abandoned. Coalinga had 779 producers; in August only 724; gain, 55 producing. Watsonville remained stationary, having five producers; Arroyo Grande also, with two producers. Lompoc made slight gain in producers, from twenty-one in August to twenty-four in September. Santa Maria had two new producers working during September; total, August, 157; September, 159 wells. Summerland remained stationary with 130 producers for both months. This field is slowly declining, dropping only 175 barrels this last month, but still losing. Santa Paula is credited with completing four new wells but having on production the same number as last month (August), to-wit, 267 wells. Newhall was stationary; slight drop in production from its seventy-eight wells. Salt Lake completed four new wells, which were on production; Salt Lake now numbers 262 producers; August, 258. Los Angeles has 415 wells producing same as last month. Los Angeles is holding up its production very well seeing that it is considered a declining field. The Whittier-Coyote District had 142 wells producing in September asa against 140 in August; the two new wells increased the monthly output about 5000 barrels, all told. Puente, with 56 wells, same as last month, produced 50 barrels less than last month; the one day less may more than make the difference. The Fullerton-Brea Canyon District had onemore producer this month than last; 257 in September; 256 in August. Lost Hills increases number of wells drilling, but there are still only two producing. Anything not mentioned in this resume may be found in the regular detailed monthly statement following, which shows production, wells drilling, producing and completed during the month in every separate field as well as rigs completed, showing where thenew work is being most actively prosecuted, and the county in which the fields are located:

County		Rigs Comp.	Drilling	Producing	Completed	Abandoned	Prod. for Month
Kern River	Kern	....	7	1636	6	1	1,164,900
McKittrick	Kern	6	20	186	5	....	428,107
Midway	Kern	8	185	494	29	6	2,132,651
Sunset	Kern	5	59	204	9	2	470,670
Coalinga	Fresno	8	114	779	13	....	1,578,930
Watsonville	Santa Clara	....	1	3	....	....	3,600
Arroyo Grande	San Luis Obispo	....	2	2	....	....	1,000
Lompoc	Santa Barbara	....	4	24	1	....	75,000
Santa Maria	Santa Barbara	....	44	159	1	....	461,810
Summerland	Santa Barbara	....	2	130	....	....	6,300
Santa Paula	Ventura	2	39	267	4	....	42,476
Newhall	Los Angeles	....	3	78	....	....	11,576
Salt Lake	Los Angeles	4	11	262	4	....	243,716
Los Angeles	Los Angeles	....	.....	415	....	....	36,380
Whittier-Coyote	Los Angeles	2	24	142	3	....	89,535
Puente	Los Angeles	....	.....	56	....	....	2,550
Fullerton - Brea Canon	Orange	5	55	257	4	2	517,803
Lost Hills	Kern	4	23	2	....	....	24,250
Salinas Valley	San Benito and Monterey	....	3	.....	....	....	.....
Repetto	Los Angeles	....	.....	.....	....	....	.....
Totals		44	596	5099	79	11	7,291,254

Summary

	Barrels.
Stocks, August 31, 1911	39,837,101
Production, September, 1911	7,291,254
	47,128,355
Consumption, September, 1911	6,369,518
Stocks, September 30, 1911	40,758,837
Average daily production	243,042
Average daily consumption	212,317
Average daily surplus	30,725

The Traders Oil Company has decided to issue more bonds for development work. It is said that the directors have decided to acquire more property.

A refinery is being constructed by the Coalinga National Petroleum Co., and will have a capacity of 6000 barrels a day.

The Wadhams Oil Company has purchased a site for storing refined products, in Seattle, and will "compete" with Standard. That's what they all do—in the press dispatches.

Canada has a new oilfield. Brandford is its name. Particulars lacking.

Present Status of the Independent Oil Producers' Agency

A Great Forward Step is Taken by the Independents

Agency-Controlled Storage and Reduction in Directorate Voted Almost Unanimously

September 29, 1911, will be a memorable day in the records of the history of the Independent Oil Producers' Agency of California, because, at the large and enthusiastic meeting of the directors of this remarkable marketing organization held on that date, two very important and a number of minor matters were decided upon:

First. The storage plan proposed by the Executive Committee of the Agency was adopted, although all plans for the carrying out of the proposed system have not yet been formulated. Second in importance to this was the disposal of the matter of reducing the Board of Directors from 150 to 75 members; this matter was voted upon at a previous meeting, and at this last meeting, when it was possible to secure action because of the fact that a quorum was present, the President of the Agency was authorized to appoint a committee of five persons empowered to accept the resignations of the various members of the directorate. At the same time this committee is vested with considerable power as it practically has the choosing of the new directorate, inasmuch as its acceptance of the resignation of any representative of a member of the Agency shuts out that member, while those whose resignations are not accepted constitute the new Board.

As we go to press we learn that all the resignations are in the hands of the attorney for the Agency, who will turn them over to the committee appointed by President St. Clair as soon as that committee meets to take official action. The committee consists of the following members of the Agency directorate: W. B. Robb, R. W. Dallas, G. A. Scott, David Ewing and A. L. Cheney. Mr. Scott, of Coalinga, has not yet called the committee together and no date has been given for this important meeting. However, it is scheduled to take place in the early future, so that the new directorate can be expected to take charge of the welfare of the organization at no far distant date. This will facilitate action upon the part of those controlling the destinies of the Agency as the old Board was undeniably very unwieldy—as anyone can perceive.

The Storage Plan

The storage plan, as thus far divulged, contemplates the use of ten and not twenty millions of barrels of storage. This storage is not to be entirely erected anew, nor to be entirely of concrete; for chemical tests have shown that concrete is not as desirable for the storage of the lighter petroleums as steel tanks. For the heavier oils concrete is most suitable. For this reason $1,000,000 will be paid for steel storage now rented from the Union Oil Company. This storage is to be taken over by the Agency's subsidiary storage company (to be formed), at the price paid by the Union for it. Whether or not the remainder of the ten-million-barrel storage is to be entirely concrete we are as yet left to speculate. At most this is a matter, thus far, of minor importance; the main fact is that the storage company is to be formed at the earliest possible date, and that it has been agreed upon by the Board of Directors.

The Financing of the Storage Company

The financing of the storage company has been carefully planned and with an eye to economy and highest success. It contemplates the issuing of $2,500,00 in bonds, which amount of money has been assured the Agency "within thirty days after the company is organized and authorizes their issue." While we have no authority for it, the "Oil World" states that "the bid received for the bonds was 90, with interest at 7 per cent, they (the bonds) to be retired in any quantity desired on any interest date at 1.03." The entire estimated cost of the storage for a period of ten years can be accurately placed at 33.3 cents per barrel, which reduces the rate per year to approximately 3.33 cents per barrel, a tremendous saving. This includes thesinking fund for retirement of the bonds. The charge for the first year will be .02.04 cents per barrel. With the creation of the sinking fund instituted in the second year the cost is raised to .04.2 cents per barrel, which is the highest cost for the entire period. The cost from then graduates with regularity down to .02.76 cents per barrel for the tenth year, making an average for the ten-year period of .03.4 cents.

The Advantage of Storage Plan Proposed

In a nut-shell the advantage of the storage plan proposed and to be ratified by the boards of directors of all the companies belonging to the Independent Agency, lies is this: That the ten millions barrels of oil above ground today is taken entirely off of the market at a minimum cost to its owners, for future consumption, when there is not as much oil above ground as now, or when the price, in accordance with a wider market, which will have had ample time to expand, has increased to a point where it affords an ample or reasonable margin for profit. In the meantime, the surplus, which now burdens the Agency companies, and which the other marketing factors point at as sufficient reason for keeping down their price to producers, and thus keeping down the market price to consumers (the one angle of which condition in favor of producers being that the market is thus induced to widen); this surplus, being off the market, an outlet for between 80 and 90 per cent of the production of the Agency companies is opened. Thus the members can dispose of their oil, and can earn enough in this manner to more than pay for their storage, with running expenses insured as well as a resumption of dividends. It will be seen what a tremendous step forward the ratification of this plan is. It will also be shown that the organizers of the plan display a splendid acumen and financial intelligence. A point which strikes us here is, however, that if but from 80 to 90 per cent of the oil is sold, unless there is an arrangement calling for curtailing of production in proportion to market demands there will shortly be apparent another storage problem to care for, as anyone will see who looks into the matter. And it is a question even, whether or not a number of companies would not double their activities under the new conditions. It is to be hoped, for their own welfares, that such will not be the case; but only experience, meaning the passage of time, will show.

Further Angles of Storage Plan

The stored oil is to draw interest. This may sound surprising, but is a fact. It is due to this, that the member of the Agency who now has a large surplus in storage, and who participates in the monthly sales in proportion to that storage, will now have a largely reduced income, inasmuch as the storage is entirely removed from the market. In order that he may be

repaid, or somewhat reimbursed, he is to be given 6 per cent per year interest on the stored oil at the rate of 25 cents per barrel valuation of same. At the same time, the stored oil is not to be charged in any way; all charges for its care are to come out of the monthly sales. How ingenious this method of caring for the surplus is, needs no elaboration. The tax providing for thestorage, on the sales, also provides for interest on the stored oil to the owner.

The division of the capital stock of the storage company is to be as follows: 51 per cent is to be common, issued to the Agency as a whole; 49 per cent to be preferred, issued to the members who participate in the monthly sales in proportion to their participation. Every member-company of the Agency will, therefore, be directly interested in the storage company. The common stock is to remain intact during the life of the Agency. It is not to be distributed in proportion to the holdings of the preferred stock until the Agency dissolves. When the bonds have matured and been retired and the storage company owns its own storage, the Agency can rent same from the storage company, having an option so to do. If, before ten years has expired, it is desired to withdraw oil from storage to supply a shortage, it can be done. In fact, every possible contingency has been provided for. The tremendous saving, in exact figures, will amount to $340,000 a year, or practically $3,400,000 for ten million barrels storage for ten years. In addition to this the Agency will own the storage at that time. Surely a tremendous step forward has been taken, or will have been when the boards of directors of the various companies comprising the Independent Oil Producers' Agency have met and ratified the storage plan which their executive committee has so carefully formulated, and than which it would appear human ingenuity could not more successfully devise under similar circumstances.

There were but three votes cast against thestorage plan. There were some objections to it; but it still appears that once again the solid, sane judgment of the great majority has won out in this decision, and the members of the Board of Directors who voted in favor of the storage plan, as well as the three who did not vote in its favor (in their case because they were voted down), are to be roundly congratulated. The oil business appears already to have brightened considerably under the masterly handling of the situation by the one hundred and fifty members comprising the Independent Oil Producers' Agency.

Technical Articles of Interest to the Oil Man

(Note: The following articles, appearing in technical journals, are recommended to the busiest of oil men as of value to them. While the **California Derrick** does not print articles in their entirety, when something of especial interest appears in another publication we are glad to call attention to it, even though it **will** advertise the other publication).

"Making Producer Gas from Crude Oil." In September issue of "Mining and Scientific Press." By H. A. Grine. Describes invention of author.

"Removing Emulsified Oil from Water," by Darrow Sage, in September 12, issue of "Power." May interest chemists and others having to do with "mulsh."

"Concrete for Oil Reservoirs," "Engineering Record."

"Unstable Hydrocarbons in Illuminating Gas," "Journal of Electricity, Power and Gas." Article by E. C. Jones, discussing relative powers of oil gas and other gases, and unstable hydrocarbons, in illuminating gas, as the main subject.

"The Napthalene Problem in Oil Gas Manufacture and Distribution." "Journal of Electricity, Power and Gas." Article by F. S. Wade, of Los Angeles Gas & Electric Corporation. A very valuable contribution, chiefly to corporations dealing in gas.

"Primer of Applied Thermodynamics," third lecture, "Journal of Electricity, Power and Gas." Issue of September 14th. Treating of oil heat values.

"The Oil Industry and Public Lands in California." An article by William Forstner in the "Mining and Scientific Press," of September 9th. While not a technical article, is a valuable one. It gives figures of astonishing size in costs of oil well drilling and exploration, the article taking the stand that nothing should be done to deter the investment of capital in the development of the California oil fields, which means that the leasing system is opposed by the writer of the article. We heartily recommend this article to all readers of the "Derrick."

Another article, not technical, which will be read with interest by California oil men, is, "Influence of the Standard Oil Company in California," appearing in September 9th issue of "Mining and Engineering World." It is of value.

"Making Gasoline from Oil Well Gases," an article in "Mines and Minerals," is another excellent technical article, one which should claim the attention of all oil producers inasmuch as it may bring more revenue from their operations. Reprinted in "Petroleum Review," London, England, of August 26, and September 9.

"What Oil Will Do in the Internal Combustion Engine of Diesel Type," by W. H. Booth, F. G. S., London, "Petroleum Review," September 9th and August 26th issues. Of interest and value.

"Electrical Precipitation of Suspended Particles" (from gases)—technical paper by Prof. F. G. Cottrell in August 26th issue of "Mining and Scientific Press." Of very great interest and importance to corporations.

The Grine-Nelles crude oil gas producer, a new invention made by the gentlmen whose names are linked above, is a remarkable money saving invention. The Fry pumping plant in Hollywood, Cal, has used the new gas producer with a 100 H. P. engine at a saving of 66 2-3 per cent in the cost of power. The invention uses crude oil instead of distillate, making a gas suitable for gas engines therefrom. The following from the Los Angeles Express is self explanatory:

"The producer at the Fry pumping plant consists of a cylinder shell about six feet in diameter and eight feet high, in which the gas is manufactured, and from which it passes through two small cylinders in which it is washed.

"The gas differs from the ordinary gas in that instead of the illuminating propreties being preserved they are gotten rid of and the power properties are preserved instead."

The Los Angeles Chamber of Mines and Oil has appointed a committee to draft a new oil land bill based on the leasing system to be submitted to Congress. Judge Frank Pierce, former Assistant Secretary of the Interior, who is now a resident of Los Angeles, is chairman of the Committee.

The names of Robert D. Wade, a director of the Lakeview and other companies, and W. B. Robb, secretary of the Producers' agency, have been added to those formerly appointed on the chamber of mines and oil committee. The six members of the complete committee are Judge S. E. Vermilyea, Frank Pierce, Calvert Wilson, Russ Avery, attorneys; Norman Bridge, W. W. Orcutt, F. V. Gordon, W. B. Robb and Robert D. Wade, oil men.

The Geological Survey has issued a report on the Lander and Salt Creek oilfields in Wyoming. The report is very interesting.

The Associated is laying a pipe line from the Belle Ridge wells north to connect with a line that is to be laid from their station to the Devils Den.

Full Report of the First Annual Meeting of the Stockholders of the California Consolidated Oil Co.

Shareholders Re-elect Admiral Evans Unanimously, Acclaiming his Presidency by a Vote of Thanks.

Admiral Evans's Address in Full, Giving History of the Company in Detail and Prospects for Future. Harmonious Board Elected

(Reported by Charles Carroll Wright)

The first annual meeting of the shareholders of the California Consolidated Oil Company, held in the company's office in the Metropolis Bank Building, in San Francisco, on October 16th, resulted in the absolutely unanimous re-election of Rear Admiral Robley D. Evans, U. S. N., retired, as president, a full new directorate, the decision to change the head office of the California Consolidated Oil Company from San Francisco to Los Angeles, and finally, but by no means least of all, a splendid confidence in every shareholder in the management of his company, and in its certain future.

Many very well-known people attended the meeting, which was an overflow one, filling the office of the company away beyond its capacity, and finally necessitating the removal of the meeting to the commodious room set aside for the use of the directors of the Metropolis Bank in the basement of the building, next the vaults. Even this large room was very comfortably filled. The meeting was held at 2 p. m., sharp, on Monday, the 16th instant.

The first matter on the program was the reading of the minutes of the last meeting of the board of directors of the company, held April 12, 1911. These were quickly approved and a slight change in the by-laws of thecompany was then ratified and confirmed. It was found that a very large majority of the registered stock of the company was represented at the meeting, which showed an exceptional interest in same. The address of the president of the company was the next matter of interest. This we give in full in a subsequent paragraph; we turn here to the election of officers and directors. The following officers and directors were elected by unanimous vote to take charge of the affiairs of the company for the coming year:

Robley D. Evans, Washington, D. C., President; Charles E. Greenamyer, Pittsburg, Vice-President; Meredith P. Snyder, Los Angeles, Treasurer; Henry Wellington Wack, New York, Counsel; John Q. A. Walker, Los Angeles, Assistant Secretary and Registrar; Jas. R. Riggins and Frank N. Fish, both of Los Angeles, constitute the balance of the directorate. George Weaver, of New York City, was re-elected Secretary. With the election of the officers and directors over, it was voted to remove the main office of the company to Los Angeles; this was also voted unanimously. No vote was taken on the proposition referred to in the notice of the annual meeting sent to shareholders, to reduce the capitalization of the company, because Admiral Evans explained to his audience that an arrangement had been made with Mr. Chas. E. Greenamyer, of Pittsburg, who is president of the California Consolidated Oil Securities Company (the organization formed to market the shares of the company and thus create a fund with which to develop their undertaking), whereby the unissued capital of the company is made over to Mr. Greenamyer to market as president of the Securities Company, thus saving the large tax upon the company's unissued capitalization which the California law imposes. As the only idea of reducing the capitalization had been occassioned by the desire to save money for the company, the tax running into something like $400 for the year, there remained no object in such a reduction, wherefore the matter was dropped.

Address of Admiral Evans to Shareholders

Prior to the election of officers came Admiral Evan's address, which was in all ways a remarkable one, and which we give in its entirety. This address was not read by the Admiral, who, although he appeared in splendid health and occupied the chair of the presiding officer with utmost efficiency and acumen, caring for all matters with dispatch, saw fit to have Mr. Wack, chief counsel for the company, read, while he listened attentively. We trust that every reader of the California Derrick will read this address with utmost care, constituting as it does a resume of what has been almost general in the oil fields of California recently, as far as the oil business is pictured; and of conditions regarding the floatation of companies in this State, which we cannot recall being one-half so ably presented by any other person in any capacity during recent times. Following is the address in its entirety:

PRESIDENT'S ADDRESS TO SHAREHOLDERS OF THE CALIFORNIA CONSOLIDATED OIL COMPANY AT SHAREHOLDERS' ANNUAL MEETING, OCTOBER 16, 1911.

Your company was organized on September 13, 1910 and has therefore been operating a little over a year. Like many another infant, it has survived a year of disheartening difficulties. Had I any preconception of what lay in wait for the company when its organizers induced me to accept the presidency, I should not have surrendered more profitable business interests to assume the worries which have beset me in your company. However, with the substantial co-operation of the shareholders, your directors hope to make rapid progress from this time forward. But the shareholders must assume their just share of the corporate responsibilities—not shunt them all upon their officers. The management of a large oil company is not an idle pleasure, and I have no personal desire to indulge it unless I am assured of the sympathy and support of the company's proprietors, namely its shareholders.

We began business in October 1910 with an excellent board of directors and oil conditions in California most favorable. We had examined and contracted for the purchase of two of the best oil properties in the West—The Mascot and the Premier. Every expert whom we consulted confirmed our own high estimate of those properties. There was and is absolutely no doubt about their great value as steady oil producers. Their purchase price was an investment, not a speculation. To acquire them meant large dividends for our stockholders.

To buy them required money, a large amount of money, a total of $3,700,000. To acquire that sum or any part of it, necessitated the sale of the stock of your company, not privately to the friends and acquaintances of your directors or your company's promoters, but to the public. This demanded resources for an advertising campaign, the large staff of a selling organization, and a large list of clients, none of which your company possessed.

So it was that the chief promoter of your company, the head of the Lincoln Mortgage and Loan Company, ofSan Francisco and its subsidiaries, obtained an option for the purchase of practically all the authorized capital stock of your company, some nine million shares. With characteristic optimism the Lincoln officers felt confident that they could sell all our shares in time to apply the proceeds to the purchase of the Mascot and Premier properties. But these energetic gentlemen underestimated the chances of delays, of defaults and failure; nor had they then the slightest premonition of that long series of hurtful hindrances which early in October 1910 began to wreck their brilliant prospects.

During the first month or so of our corporate existence the Lincoln companies sold approximately $100,000 worth of our stock. At that rate we should have been able to acquire the Mascot and Premier properties as agreed. But the Lincoln companies expected to do much better than this when they got into the fuller momentum of their campaign. They therefore pledged themselves to make payments to us which, if realized by your company, would have paid for the Mascot and Premier in less than two years and a half.

Relying upon these pledges and faithful performance by the Lincoln companies, your directors rested in the belief that the properties contracted for would be rapidly acquired.

The first event to upset these calculations was the notorious failure and prosecution of Burr Brothers, dishonest promoters of worthless and mythical oil companies. The collapse and arrest of these swindlers threw the public interested in oil, into a state of panic. Oil stocks were thrown upon the market regardless of worth or results. Everybody seemed to assume that because Burr Brothers were a band of crooks, all oil companies were conceived in iniquity and conducted for the purpose of robbery. An unreasoning distrust of the great oil industry pervaded the country.

But this was only the beginning of our difficulties. The United States Postmaster General not only denounced Burr Bros. and their meretricious methods, but cast stones at oil companies generally, specifically mentioning the California Consolidated. When the rank injustice of this was reported to the Attorney General of the United States and to the Postmaster General himself, the latter recanted and repudiated the statements attributed to him and did what he could to correct the error he had made in our case. But the injury of this unfortunate blight to our company has never been overcome. The sales of our stock ceased abruptly. The increased advertising done by the Lincoln companies did not produce their adequate revival. It seemed, indeed, as if the ill-considered public utterances of the press had ruined our legitimate business project.

Complications and distress arose within the Lincoln companies. Therefore instead of paying into your company the funds they received for stock they had sold for cash and on deferred payment plans, they applied the larger portion of these funds to their own stock. This caused your directors to cancel their selling agreement with them early in February and to seek other means of reviving the sale of your company's shares. From that time forward your officers have labored day and night, all the way from California to Europe to regain the position of promise which obtained in October 1910, before public confidence in oil had been so rudely disturbed.

About this time, that is, in February of the present year, a serious depression in the California oil industry began to manifest itself. Men with excellent properties, and business methods beyond criticism, found it difficult to finance their oil industries. Some were over-extended and had to sell their best stocks to save their speculative holdings. Piratic brokers began circulating our shareholders with a view of despoiling them of their stock. The clerical office chaos in the Lincoln companies caused some of our stockholders to believe these falsifying circulars, with the result that they foolishly assisted our enemies by throwing their stock into dishonest hands.

Occasionally it is stated that the Lincoln Companies were the agents of the Consolidated and that subscription made to the former were paid to the latter. That is not the fact. As I have already stated, Nichols F. Wilson obtained an option to purchase all of our stock on the understanding that he would not employ methods disloyal to our company. Unfortunately the fact remains that many hundreds of subscribers who thought they were buying our company's treasury stock, were merely buying stock owned by the Lincoln companies; so that our company derived no benefit whatever therefrom.

Once we were rid of this connection, your officers set about to reshape the Consolidated Company's internal affairs, to meet the oncoming depression in the oil industry and to find new means of resuming the sale of its stock. Obviously this was more difficult than ever, inasmuch as piratic brokers in combination with our weaker shareholders kept the open market supplied with stock at prices for which your company's management would not consider selling it.

I personally visited California and held several directors meetings here in January and February, and conferred with the owners of the Mascot and Premier properties. As a result of these meetings, the price of the Mascot and Premier properties was reduced from $2,100,000 to $1,750,000 and the option on both properties liberally extended. At that time and in March, when I sent my personal counsel from New York to California, to cut out every possible item of administrative expense, we cancelled every contract of employment, reduced all necssary office expenses and attained an internal economy than which it was impossible to go farther.

In March I again sent an attorney to meet with the directors in California and to effect an exchange of our option on the Premier for 1000 acres of valuable oil land in Mexico—land which lies in the very heart of the great oil development in the Tampico district and which when developed, it is believed will yield large returns upon our entire capital. The object of this mission was satisfactorily accomplished and your company now has an agreement for a leasehold title to the land indicated.

Meantime the California Consolidated Oil Securities Co. was formed in New York City by responsible men who agreed to undertake the sale of our stock, so that we could proceed with the purchase of the Mascot and, if deemed advisable, the development of our Mexican land. But the depression in the California oil field, the hesitation of the investors to enter it, the continued stockjobbing of dishonest brokers and the approaching summer season, have resulted in a minimum of result for a maximum of hard work. This autumn, however, our stock is being rapidly absorbed upon the open market by interests which have theutmost confidence in the basic soundness of our company's aim, and it will not be long before the bears and the pirates who have been decrying it will have a heavy penalty to pay. The California Consolidated Oil Securities Co. will again actively wage the sale of our shares immediately after this meeting if the support of the shareholders to that end has been reasonably assured.

But this is not all your directors have endeavored to do to conserve and promote the objects of your company. Their arduous work cannot be detailed here—the recital would carry the meeting well into the night. I will, however, mention one effort which failed only because California stockjobbers did their utmost to destroy a California industry. One would expect Californians to assist, not to destroy a legitimate enterprise which sought to bring four or five million dollars into the State. Not so with your dishonest broker pirate. He employs his energies to falsely set forth in the press and by circulars how utterly worthless every California company is, except those mysterious structures of his own design.

In May last we had so far settled with Belgian financiers upon the sale of 1,200,000 shares of our stock that the gentlemen executed an agreement to purchase early in June. This sale would at once have put your company in possession of the large revenues derived from the Mascot property. After considerable correspondence, I sent our New York counsel to close the sale. When he reached Belgium he discovered that the falsehoods disseminated by the pirate brokers had destroyed Belgian confidence in the value of the properties we proposed to acquire. The deal fell through, and six months of hard work went for naught—simply because of a superabundance of misrepresentation in California.

This is all I intend saying of our past difficulties, except to add that instead of abandoning a project with the conception and promotion of which I had nothing to do except to report upon the value of the Mascot and Premier properties, I and my counsel have stood firmly by, striving mightily to shape our affairs for substantial progress despite the absence of financial support. For the last six months I have personally paid the office expenses of this corporation. Theretofore I had paid a large sum in cash for a block of its stock, and the members of my family and many of my friends did likewise. No one could have done more to bring the Company through its disrupting ordeal.

Now let us turn our eyes upon the future. At no time in its first eventful year was the company in as good a position as it is today. This is so apparent to those who believe in us, that the president of the California Consolidated Oil Securities Co. has come to California with us to meet some of the shareholders to look over the Mascot and to return East to raise funds wherewith to complete its purchase. This gentleman, Mr. Greenameyer of Pittsburg, will also be a candidate for election to your board.

Briefly stated, our financial position on October 1st was as follows:

Out of the 10,000,000 of the company's authorized capital, there have been issued only 1,206,661 shares. Deducting 103,776 shares donated to the company's treasury and 100,000 to be returned from the number paid for the Yellowstone Company, leaves 1,002,885 shares net outstanding. Recently a San Francisco broker solemnly stated that we had issued six million four hundred thousand shares.

We have paid upon the Mascot property the sum of $56,640.00 but reduced its cost to us by $850,000 from the original purchase price, so that if we acquire it during thenext year we shall have less than a million and a quarter to pay on it.

Of the 1,206,661 shares of our stock issued, 750,000 were paid for 520,000 (control) of the Yellowstone Oil Co., which owns 225 acres of land, some of which is leased to other companies, while a portion of the developed land is being operated by the company itself. The land which the company operates produced 9,000 barrels a month, but owing to the temporary depression in the oil market, production and cost of operation have lessened accordingly.

We have received from Messrs. Spellacy & Thomson agreement for leasehold title to 1000 acres of their La Costa oil lands near Tampico, Mexico. The value of this land, when developed, has been estimated upwards of $2,000,000, with fair prospect that it will be worth more than the entire authorized capital stock of your company.

Our shareholders should feel no alarm because of theraids made upon our shares by unscrupulous brokers. We are not alone in disappointments during the past year. The best oil companies on the Coast have either reduced or discontinued dividends. Oil stocks which a year ago were selling for $4.00 per share, can now be bought for $1.00. The entire oil industry is sharing in a decline which I am certain is only temporary. In a few months you will all wonder why you didn't appreciate the present opportunities for profitable investment in an industry destined to astonish the world. The use of fuel oil is only beginning.

Now, after your company's first year of difficulties, it needs the loyal support of its 2100 shareholders scattered throughout the world. It needs what all corporations need to maintain their progress and development—it needs money. The company's assets are potentially too valuable, and they hold the promise of too much gain to be idly abandoned. If the shareholders will not support their property, by refraining from selling their stock for a pittance, I am sure that duty could not be exacted of the company's officers.

Finally let me say to you that I have made four visits to California in about a year in your interests, this last one at my own expense. I have brought counsel with me whom I charged in January 1911 to thoroughly examine into the company's affairs and recommend its readjustment and economies. That work has been satisfactorily accomplished and the complicated impracticable concern which your promoters imposed upon me a year ago is now a simplified, effective and economically-managed business machine with which you shareholders can earn a gratifying income upon your investments.

I should be pleased to see an able and prominent Californian elected President of your company, and that one or more of you larger shareholders might be put upon your board. While these changes might increase Californian confidence in your enterprise, they could not, I am sure, work more faithfully for your welfare than the present management has labored amidst heartbreaking hindrances. As I reside at the other side of the continent where most of the shares of this company are owned, it might be held that I should continue in charge of the company. But without compensation, and, for the past six months at an expense of $3,000 imposed upon me personally, I cannot promise to bear the cost nor the responsibility much longer unless the shareholders provide the working capital so necessary to all growing concerns. I shall therefore hope for your active support from this time forward—assured that the attainment of the company's object will result profitably for all its shareholders.

Several times during the reading of Admiral Evans' address those present, who strained to catch every word, demonstrated their feelings by clapping their hands. Once Admiral Evans stopped Mr. Wack to make it clear that the development of the company's Mexican lands could in all probability be accomplished with very little expenditure on the part of the company, a European syndicate having already made a proposition whereby it is hoped to accomplish this end. This proposition calls for the floatation of a subsidiary company with a proportionately small capital, 49 per cent of which would be sold to the syndicate mentioned, who would then place at the disposal of the company sufficient funds for the development of the Mexican tract, and who would assure the investors in the new corporation 7 per cent interest for two years, as well as assume all the risk. This splendid proposition is made the company because of the excellent character of the land controlled by them. Concerning this, Col. Timothy Spellacy, who was called upon to speak immediately after Admiral Evans had concluded, stated that the company's property was in a belt that had been immensely prolific of oil; that it was but a few miles from the world-famous Dos Bocas gusher, which produced, to

quote Col. "Tim," "upwards of 500,000 barrels of oil a day"; and that it had every indication of being splendid oil territory. Col. Spellacy then corroborated the statements made by Admiral Evans in regard to the condition in the oil business this last year, laying the blame largely on Midway, where the Lakeview gusher and the other tremendous wells came in to disturb the market rudely. He explained how the oil business had always been a business of "ups and downs"—and that the present was a time of "downs." And that in his belief there could not possibly be expected anything but that the price of oil was bound to rise shortly, as producers "couldn't really produce for as low as 30 cents per barrel and continue development in Midway, for any length of time and make money." The Colonel explained how it had come about that he and his associates had wished to aid Admiral Evans' company, and had, therefore, reduced the price of his Mascot property, which he had been ready to do with the slump in share prices, accordingly. He hoped to see the California Consolidated soon on the road to prosperity, and expected to, if its present excellent management was continued. (Cheers). He answered several questions and then seated himself, being liberally cheered.

The feature of the entire meeting was its extraordinary harmony; the confidence of the shareholders in their president, and the desire to stick by their investment and hold fast until the storms had been ridden and dividends were being paid. Everybody was carried away with the determination their president had shown in standing by them; and not only hand clapping, but a cheer went up, while every face brightened perceptibly when Mr. R. H. Campbell, a former State Senator of California, of whom it had been said that he was a "doubting Thomas," arose and offered a motion "that he believed he expressed the sentiment of every stockholder present in offering a vote of unqualified thanks to Admiral R. D. Evans, president of their company, for his manly attitude in upholding the company through its trials and vicissitudes." While he was making this motion the Admiral started to interrupt, interjecting the sentence, "I must say here that if it is your intention to throw any bouquets in this direction—" which he was unable to finish, being drowned down by a prolonged siege of hand clapping.

There Will Be No Assessment

A prominent stockholder interrupted Admiral Evans with the question: "Mr. President, it has been rumored that as seems generally usual among the oil companies lately, an assessment would be called for at this meeting?" Admiral Evans, with great promptness, replied as follows: "Not with my consent, sir; all I ask is that the stockholders stand loyally by their company and not allow their stock to cripple their company by having it get into the hands of the unscrupulous, piratical stock-jobbers of San Francisco."

After the election of officers, which required no time at all, and the adoption of the other motions chronicled, the books were declared open for the number of hours provided for in the laws of this State in the interest of stock-holders. The meeting was then declared adjourned, and a directors meeting was called immediately, and went into consultation in the company's regular office. But before the shareholders dispersed a very large number of them pressed about the officers and tendered their thanks, and further expressed their entire confidence in the future of their company.

An important strike of high grade oil is alleged to have been made near Albuquerque, N. M. Another Great Southwest story. Wealthy oil men and capitalists are rushing to the scene of the strike! Standard Oil is already buying up all the property there. Hoo-raw for the boom! Extry!

Mexican oil is being shipped into Texas so rapidly that the Texas people are becoming alarmed and now wish a protective tariff which will bar the Mexican product. There is no duty at present and Mexican oil is displacing the Texas product in the refineries of the Gulf Refining Company and the Texas Company, inasmuch as these companies have Mexican holdings with all the oil they can use and they produce it and bring it into Texas at less cost than they can secure the oil from independents, even when the latter pay pipe line charges for shipping their oil to the refining companies. California has nothing like this, and will not have, in all probability.

September Exports From San Francisco And Comparison of Nine Months Ending September, 1910 and Nvember, 1911

With the close of September of the current year the first three-quarters of 1911 saw an export business from the port of San Francisco totaling 111,075,925 gallons (equivalent to 2,644,665 barrels of 42 gallons each), of all classes of mineral oils, with a value of $2,870,419. This is a tremendous increase over the same period of 1910, when only 75,280,310 gallons of all classes of oils were shipped, with a total value of but $1,900,894. Perhaps this increase would look better in exact figures. Such are: Increase in exported oils, 35,795,615 gallons; increase in money received, $969,525. This is almost a fifty per cent increase in quantity exported during the first three-quarters of 1910, and an increase in value greater than fifty per cent. This remarkable showing deserves the closest attention of our oil company presidents and of those producers who are inclined to think the market stationary. It really affords a very large morsel of food for thought. If the increase can be maintained for the entire year, and for the year to come at the same rate, it is probable that the exports will materially aid in bringing a better price to the producer for his product.

September's exports of oils, with values, were as follows: 7,444,630 gallons crude, valued at $104,661; 11,141 gallons naptha valued at $2,223; 11,190,538 gallons illuminating, valued at $371,801; lubricating and paraffin, 24,255 gallons, valued at $7,128; no residum exports.

September, 1911, totals are: 18,670,564 gallons, valued at $485,813. September, 1910, registered a total export of all mineral oils aggregating 6,984,225 gallons, valued at $184,451. The total gain of September, 1911 over September, 1910 in quantities and values for all mineral oils exported from San Francisco is therefore: 11,686,339 gallons, valued at $301,362, which is not so very far behind being double in both value and quantity, and thus furnishes a most cheerful subject for consideration.

E. E. Henderson, operating in Wheeler Canyon, in Ventura County, has finished his No. 1 well and it is now producing 250 barrels per day. The well was finished at 2000 feet. Well No. 2, which tapped a good sand at 1,400 feet, is being tried out. If not satisfactory it will be drilled deeper. This property is leased from the Union Oil Company. Mr. Henderson is well known in oil circles having drilled in some of the most successful wells in California.

The French-Wyoming Oil Company is building a refinery at Casper, Wyo., which is to have a refining capacity of 2,000 barrels per day. The Company is further constructing two pipe lines, fifty miles long, one a three-inch and the other a six-inch pipe, from Casper to Salt Creek, Wyo. The Salt Creek wells are turning out about 2,000 barrels per day now, the oil being high gravity and coming from a top sand reached at a depth of 1800 feet. The oil is very high class, a natural lubricating product superior to that obtained at Franklin, Pa., of 23½ degrees gravity. Dr. F. Salathe, well known in Los Angeles, has gone to Casper to act as consulting chemist for the company.

General Notes

"Esperanza" is the name of a new town now platted and being inhabited. It lies on Section 6, 11-23, between Maricopa and Buena Vista Lake, one-half mile from "Kerto," and close to the railroad track. The town takes its name from that of the company on whose property it is located, the Esperanza Oil Company. There are now a number of oil towns in the Westside fields where there were scarcely any developments two years ago. Esperanza lies in the gusher district in which are located the August, Consolidated Midway and other big wells.

The Santa Fe railroad will take over the Sunset Western railway on December 1st for a period of five years, the latter road being owned and operated jointly by the Santa Fe and Southern Pacific. The Southern Pacific has realized a fortune out of the Sunset Western during the last two years alone. The road extends from Bakersfield to Maricopa, Taft and other Westside oil towns.

CALIFORNIA DERRICK

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Remarkable Reception Accorded Mr. Prutzman's Article on Widening Oil Market

When, with our last issue, we published the article by Mr. Paul W. Prutzman on the present condition of the California petroleum industry and suggesting methods for widening the market for California oil, as a special supplement, we were sanguine that this excellent article would be well received by the oil fraternity, believing it ourselves to be the carefullest, completest and best analysis of the California oil situation which has been made this last several years. The reception accorded this article, by those who recognize the truth and do not seek to hedge, has been a remarkable one. We have been congratulated on all sides for our "courage" for running this splendid analysis of oil conditions today, inasmuch as the sentiments expressed do not entirely correspond with our own views. Nevertheless, we appreciate the excellence of Mr. Prutzman's article; it was a pleasure to put before the sober-thinking oil producers of the day just such a conservative statement of conditions as is seen by one whom we consider the foremost authority of the California oil business. Mr. Prutzman, aligned with no financial interests, "tied with no strings" cannot possibly be suspected of having an ulterior design, which cannot be said of other (so-called) "authorities." Mr. Prutzman's masterly treatment of his subject is, therefore, the more worthy of consideration and praise, as his only object in writing was the general welfare of the oil producers, refiners and marketers.

It will be noted that our views do not completely coincide with our Consulting Scientific Editor's. Perhaps this is due to our not having the breadth of either view or experience; but be this as it may, we are more hopeful of the effects of the Independent Agency's actions on the price of oil at the well than is Mr. Prutzman, who scans results only in his analysis. It would be "narrow-gauged" on our part not to acknowledge our difference of opinion in this one respect, conceding the advantage of brilliance, experience and wide acquaintance with oil conditions entirely to Mr. Prutzman. The value of his articles to the oil men in general is proven by the extraordinary interest they have awakened and their value to this publication we do not believe we can exaggerate. We are glad to announce at this opportune time, that a new article by our colleague on asphalt refining, including interesting tests held in refineries now operating in this State, will soon appear in the California Derrick, as will other asphalt articles by other writers. In the meantime the articles of Mr. Cooper will be continued, affording additional interest to each issue of the Derrick.

Admiral Evan's Address

There is, in Admiral Evan's address to the shareholders of the California Consolidated Oil Company, delivered at the annual meeting recently held, and published **exclusively** in this issue of the California Derrick, so much information, and so much wisdom, that we are constrained here to pause and bring before our readers theconsideration of some especially striking points.

It is, to begin with, very evident, after reading the address, that what has saved the stockholders of the California Consolidated from what might be termed almost entire loss on their investment, is solely the extraordinary character of the President, Admiral Evans. Admiral Evan's belief in the company's prospects; his fighting nature and sterling and rugged honesty would not permit, in the face of no matter what terriffic pressure, the abandonment of the ship while he was on the bridge. We hold it almost solely due to this one fact that the company did not succumb to the ill-advised statement of the Postmaster General; that it survived the extraordinary flood of misrepresentation launched upon it by muck raking, inconsiderate and totally valueless journals, both oil and lay; that in the face of the utter cessation of the sale of its stock, ocasioned by the crusade of slander, the company not only remained intact, but held the confidence of a vast majority of its shareholders, scattered about the globe from one end to the other—and that in the face of the false statements set forth in the circulars of those who seek to live off the destruction of worthy enterprises, while their own, written about glowingly in the false journals they employ as their tools and house organs, and under cover of advertising, reap in a harvest of gain at the expense of the unwary; and sail under false colors until their disappearance from public view—which disappearance is discreetly cloaked in mystery and goes unchronicled by the fake "oil papers" in which they advertise. Is it at all to be wondered at, with this almost inconceivable state of affairs in existence, that outside private capital hesitates to enter the oil fields—or when it does enter, does so usually in a very unostentatious manner?

What a terriffic indictment the Admiral's address constitutes against the venal journals of this State! He says:

> In May last we had so far settled with Belgian financiers upon the sale of 1,200,000 shares of our stock that the gentlemen executed an agreement to purchase early in June. This sale would at once have put your company in possession of the large revenues derived from the Mascot property. After considerable correspondence, I sent our New York counsel to close the sale. When he reached Belgium he discovered that the falsehoods disseminated by the pirate brokers had destroyed Belgian confidence in the value of the properties we proposed to acquire. The deal fell through, and six months of hard work went for naught—simply because of a superabundance of misrepresentation in California.

The despicable methods employed by certain brokers who conduct "oil" journals as their house organs for the promotion of the sales of their stocks have been little known outside the State until lately, but are becoming better known all the time. These journals, under cover of "protecting" the public (from worthy enterprises) raise a hue and cry against some company which appears to be doing well, to get the stockholders agitated in order that they may profit by the trading which will result, and in any benefit which may ultimately come to stockholders, if the company survives, after they have secured for little or nothing as much stock as they can "load up." In the meantime they have probably scared out enough money from the industry to develop ten legitimate enterprises, and may, through nobody knows what methods, have secured the confidence of a certain number who believe in muck-raking as a general thing, and have roped such persons into their own schemes. This results in harm to the industry in many ways.

It can easily be seen that when an enterprise is attacked which is nicely started and developing on conservative lines on the proceeds of sales of its stocks as is found necessary to defray expenses (for the smaller developing companies usually cannot raise money on bonds), the sale of its stock is immediately checked. What is such an enterprise to do? It may have splendid potential assets; may be possessed of properties; may even be on the very verge of success; but, if public suspicion has been turned in its direction and it has no other method of developing than through the sale of its shares, and the shares are no longer desired by the public, it must, unless strong outside or internal aid is given it, either close down, go out of

existence in dishonor or levy an assessment. The latter course is often resorted to; and in this case the company is, often as not, further attacked for raising funds wherewith to continue developments until such a time as the shareholders could be reimbursed dollar for dollar. Thus is a tremendous amount of money lost to shareholders, and great discredit cast on oil promotions generally.

Of course there is no parallel in case of the California Consolidated, even though the sales of its shares did entirely cease. The character of the President of the company, made it impossible to state that he was in business to "skin the people." But it did not make it impossible to slur the company on every occasion, which was largely done. Yet this very company holds the controlling interest in the Yellowstone Oil Company, which has holdings of 225 acres; owns more than two thousand shares of the stock of the Mascot Oil Company, which Company is one of the most splendid investment propositions in the California market; as well as a liberally extended option to purchase most advantageously; and controls in addition 1000 acres of excellent prospective oil lands in Mexico.

The troublous days of the California Consolidated are over; thanks to Admiral Evans' leadership and unremitting toil, which not only was gratuitous but which brought with it expenditures amounting to several thousand dollars; and to the general faith of the investors in that company. Everything looks bright for them; and it is sincerely to be hoped that their enterprise will, from now on, receive the support of the public which looks for returns, and that, within no great length of time, the returns will be amply provided.

Observations on Current Events

If the leasing system does nothing else (presuming its adoption), it will probably check the great output which is causing the acute "storage problem."

Some 20 per cent of the oil producing companies in the Midway field are operating on Government property which was withdrawn September 27, 1909, and which the operators thereon did not begin developing until after that date. Some of them began operations with the understanding that the withdrawal was not legal; others with the idea of "taking a chance." From the present outlook the chance was a very long one. Those misinformed are indeed unfortunate if the withdrawal stands.

Lost Hills begins to make its appearance in the producing class just in time to aid in maintaining the tremendous output of the past few months.

The Associated Oil Company has announced the discontinuance, temporarily, of accepting oil on daily runs. It is surmised that Associate's tanks will not hold more oil than is now contracted for, for some time to come. But nobody knows the length of time.

Congressman Needham says, "We are passing through a reform period." Many oil operators think the reformation is going in the wrong direction.

Other States than California get the benefit of California's money from "withdrawn" lands. It is a question whether or not California will derive any benefit from the withdrawal of our wonderfully rich oil acreage.

Agency sales averaged in September practically the same as in August—1,300,000. The September returns, however, are given as 1.9 cents per barrel less than during the earlier month. Price fluctuates only a little under Agency control.

A large number of steamships are about to be put into operation. Orders for five new 10,000-ton vessels are said to have been placed by one company under Pacific control already. This in anticipation of the tremendous growth of sea-trade, via Panama, with the completion of the canal. They are all to be oil-burners. They will burn California and Mexican oils, thus broadening the market of both fields. But they will do far more than this; as an object lesson to Eastern ship owners they will be very valuable in spreading the gospel of economy through the use of oil as fuel.

The operations of the Universal Oil Company, in the Lost Hills, are exciting great interest. The latest is an announcement that either a pipe-line or railroad is to be built into the field to accommodate the Universal's present and prospective production.

It is now stated "authoritatively" that the "Hammon Syndicate" will take over the following properties in the Coalinga field: Silver Tip, De Luxe, Amy, Lucile Republic, Zier and Empire. This deal has been pending for some time. The money it will bring into California oildom will materially benefit many operators. The report that Mr. Hammon had returned from Europe with bags filled with $20,000,000 in gold was nothing more than nonsense. But enough money has been secured to assure the deal.

"Equalization Board After Oil Property," is a headline in a contemporary which indulges an oil column once a week. The paragraph following the above headline states that more taxes are to be exacted from oil property owners if possible. The only taxes they now pay are: Corporation tax, franchise tax, real and personal property tax and a tax upon oil above ground. And now they want to add one more! It almost seems as though the taxes already levied and collected would take the profit out of oil producing under present conditions.

At last! The long-drawn-out "oil war" between Standard Oil and Dutch Shell, so muchly written about, is "nearing an end." Even the coffers of these great companies cannot stand price wars for an indefinite period of time. Our hopes are with the American corporation; the greatest in the world.

The Pacific Mail Steamship Company is to use oil for fuel. Another extension of the market.

It would appear to be better to let sleeping dogs lie, but from all reports the Union will try to bring the Lakeview gusher to life again.

In honor of Drake and the oil industry, oil men are requested to contribute to the Drake Memorial Museum and Reference Library to be erected in Titusville, Pa. All contributions should be sent to E. C. Bell, trustee of the museum fund, at Titusville.

I wish to correspond with men who will drill wells for a portion of the land or a per cent of the future production. State terms in first letter. Address: Box 502, Albany, Oregon.

The News from This Field is Written By
GUY H. SALISBURY—California's Best Known Oil Correspondent

Strike of the Canadian-Coalinga Oil Company

Note.—Special attention is given this strike by Mr. Salisbury, who has set down herein the full history of the Canadian-Coalinga Oil Company exclusively for readers of the California Derrick.—Ed.

The Canadian-Coalinga Oil Company has made what now appears to be a very important strike in Section 8, 21-15. This strike has opened up the possibilities of a section of the south field that has been considered of little value by a number of oil men, and also, has been mentioned with some doubt by geologists, some of them men of good standing in their profession. There were a number of men, however, who had faith in that section of the field; men who believed the oil-bearing sands were not cut off by the Southern Pacific railway line or the trend of Wartham Creek. Among the number was A. J. Pollak, a geologist of San Francisco, who interested Vancouver capital in Section 8, 21-15; he also backed his faith in the property by investing his own capital in the stock of the Canadian-Coalinga. John Thompson, general manager of the Canadian interests, has given his best efforts in the care and management of this property from the first effort made by his company; he has carefully directed the development work and is now preparing to care for the production.

This strike will prove of great value to this field, proving as it does, that oil exists south of the alleged "dead line," Wartham Creek. That the oil indicates high gravity adds another value to the south field; the depth of the discovery is inviting, and assures a good life to the field and it has opened up the west end of the south field, adding a large tract to the Coalinga proven territory.

The well of the Canadian-Coalinga Oil Company was commenced in October, 1910, the company employing the best help on the well and sparing no expense in the development of the property. The well was drilled into the oil sand on September 18, 1911. The hole was started with a rotary and carried 1000 feet when the formation not being suitable for a rotary the standard tools were strung up. There is 243 feet of 15½-inch screw casing in the hole; 1712 feet of 12½-inch casing and 2680 feet of 10-inch, 40-pound, casing, with which the water was shut off. No water, sand or formation carrying water has been encountered from 2680 feet to the shell above the oil sand. The oil sand was entered at 2839 feet with 8¼-inch. The well being in new territory it was thought best to cement the 8¼-inch casing in the shell just above the oil sand, and carry the cement up into the 10-inch casing, thus re-inforcing the 10-inch from any outside pressure; this would forever protect the inside of the 8¼-inch casing; this work has been successfully accomplished and the well will be tested out in a short time, and the actual amount of production will be known. The oil from the top of the sand appears to be 28 degrees Beaume, a dark amber in color; the sand is heavily saturated with oil and the present indications suggest a good producing well. The formation from which this oil is produced is termed by geologists as the middle Miocene period, of the tertiary age.

Preparations have been made for the care of the oil. Two 5000-barrel galvanized iron tanks have been set up ready to receive and care for the oil until shipped. The Associated Transportation Pipe Line passes about one-half mile north of the well, and the large 36,000-barrel shipping tank of that company is situated just one-half mile from the well. Two miles northeast of the well is located the "Tank Farm" of the Producers' Transportation Company; so the property is well situated for transportation.

The initial showing of this well is considered superior to that of any well brought in in the Coalinga field, this expression having been voiced by a number of prominent oil men who have visited the property and have examined the sand, their reason for this statement being that the hole had been continuously full of water to a depth of 2800 feet while the well was being bailed; the gas on three occasions had shot a spray of oil 50 feet above the crown block and the pressure exerted must have been considerable. Orval Giesar, the head driller on the well at the time, a man of much experience on wells of this character, say this is the richest sand that he has seen in the Coalinga field.

Mr. Pollak, who was one of the promoters and is the geologist and engineer of the company, has always been confident that the oil measures extended south of Section 6, 21-15. A careful study convinced Mr. Pollak that the unique position of the property of his company on the formation, the contour of this point and the bend in the Jacalitos anticline, all looked favorable for a well. That the sweep of the anticline in a crescent wave brings the Boychester, the Best Yet and the Coalinga Gem within the zone of this strike, is the opinion of many oil men here who have watched the development work into the south field.

Present Conditions

This field increased shipments for September over August to the amount of 66,085 barrels, while the field stocks were decreased by 78,317 barrels. The shipments for September and the decrease in the field stock swill soon clear up the "bogy" that has haunted the producer for the past year. The Midway field has shut down a number of strings of tools, and very few operators, outside of the Lost Hills, are doing new development work. This field has quieted down and less new work is now on than for any time for the last five years. With the storage plan, the result of much thought and work, as proposed at the last session of the directors of the Agency, and adopted, the oil industry will soon be in a position for a better price for crude oil. The market of the several selling agencies is expanding, and the demand for high-class fuel oil is greater than ever before in the history of oil in California. The report coming from London that the great Trans-

Atlantic liners are making ready to use oil is a factor that will make a great demand for fuel oil of a high class, such as is mined in this State. The opening of the Panama canal, in 1915, assures the oil men big business and now is the time to prepare for this market.

Developments on Section 2, 21-14, to Be Prosecuted

The Coalinga Roadway Oil Company, Section 2, 21-14, have executed an agreement with Z. L. Phelps and H. S. Greve to drill a well on the east line of the north half of the south half of the south-east quarter, 40 acres. Material is now being gathered that will be hauled for the camp and rig. This well will be in shallow territory, about 400 feet deep. Phelps & Greve are to drill the second well for the locators on the east line of the north half of the north half of the south-east quarter. The Spokane-Coalinga and the Berkeley-Coalinga, on the north-east quarter, have good wells of light oil. The wells now to be drilled are expected to be important to owners of land further south, as the line of wells will determine the trend of this sand to the south.

Election of Directors and Officers of Pluto

The Pluto Oil Company, Section 19, 25-19, elected the following officers and directors last week: H. S. Davis, President; T. J. Whaley, Vice-President; C. C. Hanford, Secretary, and Chas. Henslick and W. H. Daune. The new Board will at once proceed to complete well No. 1. The manager reports the well in the top of an oil sand that is making a showing for a good well. Much interest has been centered about the Pluto for over one year as oil was found in the shales passed through, but not enough to warrant a well; this is the first oil sand encountered. The toneof the talk of the new directors, who represent the two factions, would indicate an early completion of the well.

Best Yet Election

The Best Yet Oil Company, Section 18, 21-15, have elected the following officers and directors: O. D. Loftus, President; J. L. Gresham, Vice-President; Jacob Zwang, W. M. Hefton and Guy H. Salisbury. Guy H. Salisbury was re-elected Secretary-Treasurer. The splendid showing made by the Canadian-Coalinga, well No. 1, has added new interest to the holdings of the Best Yet property, who have 40 acres of patented land. Some inquiries are being made for lands in the locality. The Best Yet has a hole 1800 feet deep, the 10-inch casing hanging in the hole in good shape to go ahead. It is estimated that 700 feet will carry this well to the pay sand.

Southwestern Resumes

The Southwestern Oil Company, Section 6, 21-15, (re-organization of the Six Acre Oil Co.) The new company has resumed operations, the 8¼-inch replaced and drilling the well deeper is now in process; the well is now 2,210 feet deep. The Canadian-Coalinga, to the south, entered a very prolific light oil sand at 2,839 feet, this strike has encouraged the new company to go ahead. A. L. Kreiss, of Fresno, is superintending the work.

Vancouver-Coalinga Oil Syndicate Operations

The Vancouver-Coalinga Oil Syndicate, Section 14, 20-15. The contractors, J. L. D. Walp and W. P. Cypher, have set in the 8¼-inch casing, having first taken off all colors and discarding the imperfect ones, replacing same with new colors, as the string will be carried 4,000 feet, or more, and no chances are to be taken with a color stripping if it can be avoided. Drilling is now under way. The hole is 3,360 feet deep; hole in perfect condition and pipe going.

United Developement Co.

The United Developement Company, on Section 19, 20-15. Well No. 1 is producing 100 barrels per day; can do about 300 barrels or better; well No. 2 was finished up into the oil sand some time ago, proving the character of the land, "which is very important in this case," remarked George D. Roberts, general manager. Well No. 3 is 2,265 feet deep with 8¼-inch casing; water will be shut off at about 2,400 feet. The camp on Section 17, 20-15 has been completed; well No. 1 will be rigged up as soon as well No. 3, on Section 19, has the water shut off.

The United Development Company has levied an assessment, No. 5, of three cents per share, to assist in the assessment work for the year 1911. The Best Yet Oil Company has levied an assessment, No. 7, of two cents per share, which will about clear the company of debt. The strike made by the Canadian-Coalinga influences the property of both the above companies, and will stimulate development work in the south field.

Will Drill to Comply with Lease Terms

The railroad leases in this field are preparing to do more drilling to comply with the terms of their leases. The work will have to be done between January 1st and June 1st, 1912. There is a feeling prevailing among the operators on railroad land that the Southern Pacific Company will be lenient with lease holders at this time, on account of the field conditions, and that the time limit in which this work must be done will be extended.

British Consolidated Oil Corporation, Limited

The British Consolidated Oil Corporation, Limited, on Section 12, 19-15, have resumed work on Well No. 2, of which the rig was burned down last month, the new rig was completed and rigged up last week. On Section 2, 19-15, the company are pumping at the present time during daylight. This is excellent territory and will be developed as soon as the oil situation clears up a little.

Spokane-Coalinga Well Produces Natural Lubricant

The Spokane-Coalinga Oil Company, Section 2, 21-14, Well No. 1, is flowing into the tank, making about twenty barrels per day. The oil is of light gravity, of a consistency that makes excellent lubricating oil that is used direct from the well. The pay sand is only 340 feet deep, the well was completed with 5⅝-inch casing.

Camwell Oil Company Cements Water Off

The Camwell Oil Company, Section 22, 19-15 (Merced lease), have cemented off the bottom water in one well and have now a fine production from this well. The water formation on this property is now understood by Manager Sperry, and all the wells will be improved by this knowledge.

Gold Tip to Resume

A report is current that the Gold Tip Oil Company, on Section 2, 20-14, will soon resume operations, and that the stockholders have taken the matter in hand and will try and push the development work to a discovery.

C. P. Co. Developments

The Commercial Petroleum, Section 31, 19-15, Well No. 13, is 1480 feet deep with 8¼-inch casing. The water will be shut off at about 1750 feet. The balance of the producing wells are doing very nicely.

Azores Oil Company's Deep Well

The Azores Oil Company, Section 26, 21-15, Well No. 1, is 4210 feet deep with 4½-inch casing. Have passed out of the blue shale, are now in what appears to be a dry sand, drilling easily and pipe moving freely.

There are two ways to overcome the water evil. One is to cement the water off properly. The other is to rectify the oil after production by the electrical method. If you don't know what the electrical method is, ask the Reward Oil Company. They have just installed a plant.

The Santa Fe has just nstalled a topping plant in the Olinda field. Other topping plants arebeing installed all over the oil producing regions. It would not be surprising to us to and every company in California producing oil over 17 degrees gravity topping their oils inside of five years. Of course, such companies as produce very high gravity oil always have a good market so that they are excepted. But a large increase in tapping plants can be looked for.

Extra! The Universal Oil Company is due next to enter that field extraordinary—"competition with Standard Oil." It hasn't come yet—but soon! Watch for the headlines.

Get busy and read about the British buying out the California oil fields (not in this publication, however), and you will find that after all it is largely a matter of "a prominent man, very closely identified with——" we won't mention the persons or interests, but one could just as well fill in the blank with the name "Bunk." While the British investors in California are large holders and operate successful companies as a rule, they do not, nevertheless, own the oil industry of California yet.

The fact that the Kern River Oilfields of California, Ltd., a British oil concern, succeeded in getting a rebate because they were able to show the California former owners that they could not realize upon their property as had been pictured to them, due to changed conditions, reflects high credit to the vendors. It is not every company or set of men that would "make good" in such a situation.

SUNSET-MIDWAY-McKITTRICK

Production for September

With Sunset producing 470,670 barrels; Midway producing 2,132,651 barrels and McKittrick 428,107 barrels for the month of September, the entire production of these three fields totals 3,031,428 barrels of oil. This represents a gain for the three fields over the previous month of 108,389 barrels. Midway was the scene of the increase, producing 175,255 barrels more during September than during August. Sunset fell off 9086 barrels; McKittrick dropped 57,780 from the record of the previous month, or averaged approximately the same production as during July, having gained almost 60,000 in August. Sunset's big drop in September makes the output for that month about 14,500 barrels less than was produced there in July.

Fields Comparatively Quiet

September was not distinguished greatly for any especial haste to get oil, on the part of operators, most of whom are not rushing work but are maintaining a steady production. There were, however, several new gushers in the West Side fields, and these aided in bringing the production to such a high point. A feature of advantage which the West Side fields are about to enjoy, and which we have kept our readers informed about since the inception of work upon the project, is the installation of the Western Water Company's system, which will provide an ample supply of water to this dry region. The company has five wells none averaging below 360 feet in depth and none less than 60 feet down, which produce approximately 55,000 barrels daily of the highest quality of pure, fresh water. This water is being contracted at 3 cents per barrel for anywhere from one to 1500 barrels per day. Water has been sold in Midway as high as $8 per barrel, although that was in the early days. The location of the wells from which the Western Water Company's water is obtained is Section 5, Township 31 S, R. 25 E. (5, 31-25) near the east side of the Elk Hills, and from here a 12-inch main is now being extended to Taft. It is expected that all connections will have been made and water will be running by the 15th of November. A large pumping plant has been installed on the property and another on the outskirts of Taft, where the water will be pumped into smaller feed pipes. A large number of oil companies have contracted for the water. The Union Oil Company has contracted for 10,000 barrels per day. The Esperanza Consolidated Midway Premier, Mammoth, and in all some twenty-five other well-known and important companies have signed for amounts satisfactory to their needs, while still other companies have made applications to obtain a supply. The company will doubtless enjoy a very large success. All told they will have, to commence operations, some twelve miles of main (12-inch) pipe-line, an equal distance of six and eight-inch lines, two pumping stations and two steel tanks. Water will not, however, be retailed to the town of Taft or Maricopa—yet. This may come later and probably will. The company is capitaliped for $200,000, but expenditures for operation will total $300,000 before the water is running. The company's directors consiste of the following men: C. B. Colby, president; F. H. Hall, vice-president; Ira Hochheimer, secretary; T. M. Young and W. A. Fisher. This water supply will be a great boon to the oil fields, and later to the towns there.

The Standard Oil Company's well on Section 12, 32-23, is shortly to be tested for oil. This well is 4300 feet deep and went into water at that depth. It is hoped that a test will bring oil out of a higher stratum.

The Coronation Oil Company has made a strike on Section 4, 11-23, Sunset field, at an approximate depth of 2800 feet, which is considered in line for a gusher; the well is stated to have been flowing at the rate of 500 barrels per day, by heads, with a heavy gas pressure. By misfortune thewell is producing a quantity of water and mud with the oil. Hence the real value of the strike is yet to be ascertained. This is a tricky section of the West Side; Sunset always has been more or less "spotted," as one well known operator recently said, but the Coronation seems to have struck one of the good "spots."

The Midway Premier's gusher, Well No. 1, has been re-drilled and is now producing at a high rate again; said to be 2000 barrels per day, same quality oil. Same is sold to the Standard at rate stated to be 45 cents pr barrel. The oil is light and excellent refining fluid. The necessity for re drilling the gusher came as a result of the collapse of the eight-inch casing. This was shut off and the well finished in six-inch casing, and is now making as chronicled.

The Humauma Oil Company, operating on the Carisso Plains, is reported to have a splendid well of light oil, struck at a depth of 2100 feet. 8½-inch casing. The Humauma is backed by Hawaiian capital which is generally stated to be affiliated with the Matson interests.

The Midway Five Oil Company's Well No. 1 is flowing 300 barrels per day. No. 3 is down 1865 feet with 10-inch casing; No. 4 is 1350 feet down, open hole, being drilled with a rotary rig.

The Midway Pacific Oil Company, Section 24, 31-22, Midway, is down 1670 feet with 8¼-inch casing after passing through 1675 feet of oil sand.

Well No. 2 of the Kalispell is making 1200 barrels per day and is shipping about 1000 barrels, having shipped 21,750 barrels during the first twenty days of the month. No. 1 is being re-drilled.

The Pyramid Oil Company has levied an assessment of six cents per share on its outstanding stock. The date of delinquncy is November 6; of sale, November 27. Hard luck with their Midway well is said to be the cause.

The Laymance Oil Company, No. 2, Section 2, 32 23, has struck oil at a depth of 3430 feet, with a strong gas pressure. A drill stem stuck in the well makes it impossible to determine the extent of the strike thus far.

Hale-McLeod, Well No. 7, is making 700 barrels per day.

In the east end of the Elk Hills the Midway Valley Oil Company has struck oil at a depth of 4330 feet. There is not much oil thus far, but considerable gas. The oil is light, but gravity not yet given out.

The Pacific Crude, with properties in Kern River and Midway, is about to take over the property of the Cherokee, Section 14, 31-22, according to the "Oil World." We have not further information about the company except that Mr. H. A. Rispin, who is said to have been connected with the Standard Oil Company at one time, is connected with the Pacific Crude.

The State Consolidated has completed its Well No. 11 on Section 19, at 1132 feet. The oil is 16 gravity and the well is said to be making about 200 barrels a day. The sand in the hole is very thick.

The El Dora Oil Company has sold 200,000 barrels of oil to the Phoenix Refining Company at a price not given out. Well No. 1 is down 1900 feet with a rotary drill.

The K. T. & O. Company has struck oil at a depth of 3000 feet in its Well No. 7, on Section 11, 32-24, Buena Vista Hills. The oil is light gravity.

The Honolulu Consolidated Oil Company is not yet using its gasoline manufacturing plant, but is expected soon to begin operating, using the gas of the new gusher on Section 8. The company does not care to give out any more information than necessary and we have no idea as to when the plant will begin to extract gasoline from the famous wells on Section 10, if at all.

The Babcock Oil Company, operating on Section 23, 32-23, Midway, has had suit instituted against it by T. L. Moran for $30,000 loaned and secured by mortgage. The loan was secured in February, 1910, but payments have not been made as per agreement.

Lakeview Oil Company's Well No. 2 is flowing about 3000 barrels per day. Depth, 2737 feet. Gas pressure heavy. The company is preparing to erect a new derrick over No. 1, the famous Lakeview gusher, and, in course of time, will send down the drill to see what can be done to bring the great well back. At the time of its demise (so to speak), the "Great Lakeview" was averaging about 800 barrels per day steadily, of almost pure oil.

The Belleridge Oil Company has not yet purchased the 22,000 acres of oil lands on which it is operating, from the Hopkins Estate, owners, as the company is not yet thoroughly satisfied as to desire to exercise the option to purchase the entire acreage. The price is stated to be $1,000,000 for the whole tract.

The Section 25 Oil Company, located on Twenty-Five Hill, and with a contract for oil which it will take two years to fill at the rate of 65,000 barrels per month, the oil bringing 50 cents per barrel from the Associated, is now running three strings of tools. The company has paid $210,000 dividends in 19 months.

The Pyramid Oil Company is down 4780 feet on Section 18, 32-25 with the six-inch casing. Here the six-inch will be landed and the well continued past its present depth of 3900 feet, with a smaller size

The Toronto Midway Oil Company has been organized to take over and operate the forty acres comprising the southwest quarter of the southwest quarter of Section 18, 31-23, formerly held by the Philippine Oil & Gas Company, and the eighty acres comprising the north one-half of the same quarter; in all 120 acres. The property lies close to the Midway Royal, which has a 300-barrel well. J M. McLeod, of Los Angeles, financed the company

The Maricopa Northern's Well No. 2 is still making 400 barrels per day. The oil is of the lighter quality.

Patent has been granted to the mineral claimants of the land comprising the Bay City, Jade and other property thereabout which was located for gypsum and oil, and on which both were developed.

The United Oil Company has made a contract with the Standard Oil Company to deliver to the latter 500,000 barrels of oil at 45 cents per barrel. The United's oil tests about 22 degrees Beaume gravity. The United's No. 1, on Section 6, 32-23, near Fellows, has been equipped with a screen pipe, which has increased the production from 25 barrels per day to 200 barrels. If this production is sustained the screens will be installed on Wells 2, 3 and 4. The company's 65 cent per barrel contract with the Standard expired some time since and the new one is now in effect.

The Maricopa Consolidated Oil Company's property on Section 32, 12-23, Maricopa, was sold recently to Mr. Archibald Yorke to satisfy indebtedness, at a sheriff's sale. The price received was $13,324.80. There is a well down 1700 feet on the property, which comprises 20.04 acres of land belonging to the Thirty-Two Land Company.

The Standard Oil Company's gas well in the Buena Vista Hills is still producing with undiminished vigor. This one well is supplying the city of Bakersfield with fuel, the other four wells near by being held in reserve The well's production, when allowed to flow unrestrained, is between 40,000,000 and 50,000,000 cubic feet per day. The gas is used throughout the oil fields as well as in Bakersfield. It is a bonanza for its owners.

The case of Lake vs. Bonynge, which involved the title to entire Section 36, 12-24, on which are located the Wellman, M. J. Consolidated, Ethel D., and W. C. Price oil properties, has been settled in favor of the defendant, Mary Bonynge. The four well known properties mentioned all got their title from the defendant, who purchased the section many years ago, receiving a certificate as the property was school land. It was not then known that there was oil underneath the surface. Previous to Mrs. Bonynge's purchase a man named Davis had attempted to buy the property but had been unable to make good. Then Lake, the plaintiff, had, together with the heirs of the Gilman estate, purchased the interest of Davis, the original would-be purchaser of the section, and suit was instituted against Mary Bonynge. The decision is lauded everywhere, excepting by the plaintiffs, as the only proper one that could have been made.

The Dominion Oil Company, Section 15, 31-32, North Midway, which produces 10,000 barrels per month from two wells, marketing same to the Standard Oil Company, will, it is rumored, pay a dividend the first of January, 1912. Amount unstated.

We have a dispatch from McKittrick to the effect that O. C Heck's well on Section 6, 29-22, east and south of the Belridge, has passed through two stratas of oil sand the deepest of which contained a light oil, which the owner believes will produce sufficiently to be profitable.

The Ethel D.'s output for the last month totalled something like 37,000 barrels; contracted to Standard Oil, and further contract with Associated Oil.

The Edmonds Midway, on Section 32, 32-24, Maricopa, is down 2000 feet. Going.

The Honolulu Consolidated Oil Company got a splendid gusher just after the "Derrick" went to press last issue, on Section 8, 32-24, Buena Vista Hills. The well came in producing from 4000 to 5000 barrels of oil and an unlimited quantity of gas daily. This gas, it is claimed, will be the first used for refining by the wonderful Honolulu gasoline-from-gas plant. The oil is high in gravity, testing close to 26 degrees, Beaume. This well, or rather the Honolulu wells, are located on Government property, for which no patent has yet been granted, it is for this reason, in all probability that the Honolulu people are very reserved in the information which they give out, and do not let strangrs approach their wells.

The M. G. & P. Company is alleged to have a 300-barrel on Section 14, 31-22, Midway, producing 21 degrees gravity oil, which is said to be sold to the Standard Oil Company for 30 cents per barrel.

The Wheeler Ridge Oil Company, successor to the San Emidio Oil Company, is now drilling again, under Mr. Walter Snook.

As was chronicled about four months ago in these columns, when we made it known that the Reward Oil Company was to install an electric plant to treat its oil as to reduce the emulsified product to one that is pure, and thus a saleable product, the company has now completed the installation of a plant using the electrical process owned by the Petroleum Rectifying Company of San Francisco. This process leaves practically nothing to be desired as it yields a highly rectified product from one which may have been emulsified to such an extent as to be utterly unsalable and unfit for any ordinary purpose. The process treats oil lifted from the Reward's wells, wherein are used the air lift method, which completely emulsifies the oil and water and sediment, with perfect satisfaction The Petrolum Rectifying Company is a progressive one with the right system for treating watered oils and it is bound to come into a big business in time as water breaks into various fields and sections of fields. The installation of one of these plants means the saving, for a fraction of cost, of the product of many wells, and will doubtless continue to be favored whenever necessary. The latest is that the Standard Oil Company is considering installing a plant in the Midway field; exactly where is not stated, but it is expected to be somewhere near the Sunset District.

West Side Condensations

(This matter, along with some other important notes, was crowded out of our last issue. We run it this month so the information may reach all our readers, even though delayed.—Editor.)

The Midway Five Oil Company's Well No. 3 has landed the 12½-inch casing at 1357 feet. Going down with 10-inch.

The Rock Oil Company has completed Well No. 5 and placed same on pump; production not stated.

The Maricopa Consolidated Oil Company's property has had a judgment allowed against it in the sum of $15,025.75, in favor of the Southern Investment Company, which promoted it. The property has been attached and is advertised for sale by the sheriff of Kern County at Bakersfield, on October 11th. It is thought the Southern Investment Company will bid it in.

The I. X. L. Midway Oil Company, with property on Section 18, 30-22 and 36-30-22, is to begin operations on the latter section soon.

The United Oil Company is about to issue $350,000 of 6 per cent three-year trust bonds to be used to pay the residue indebtedness on their property and o tprosecute deveiopments. The Uuited, to secure the bond issue, has given a deed of trust to the Title Insurance & Trust Company for the above sum, covering the entire properties of the company.

The South Midway Oil Company, Section 34, 32-24, Midway, got a water well in their No. 1, located a half mile from the Lakeview gusher. A big oil well was anticipated, but a salt water flow started within forty minutes of the time the well started to produce oil. The company deserves sympathy in their hard luck.

The Sunset Oil Refining Company has re-organized and is now the Sunset Oil Refining Company of California; capitalization, $1,000,000. Object of re-organization and increase of capitalization given as desire to build another refinery, and enlarge generally. Their present plant can handle 2000 barrels of heavy oil per day.

Combination Midway Oil Company has made final payment on its forty acres in Section 22, 32-23, Elk Hills.

The annual election of the Templor Ranch Oil Company was held recently and the same crowd, with only one change, was elected. Templor Ranch is very quiet just now.

The Templor-McKittrick Oil Company levied an assessment of one cent a share some time since. We have not been able to find out anything concerning Templor-McKittrick which would appear to be shut down at present

The Oleum Oil Company, Section 15, 32-23, has hit the sand at 2990 feet. As the sand was not "the" sand, the well is now down 2740 feet with 8¼-inch casing. Going down.

Equitable Well No. 1 ,Section 10, 32-23, is down 1550 feet with 12 inch casing.

The Honolulu's great gaser on Section 6, 32-23, is again on production and making as much gas as ever. The report that water had broken into it has been denied absolutely.

A fund of approximately $15,000 is now available for improving and keeping repaired the road between Taft and Bakersfield. This work is very badly needed as the road has been in execrable condition for a long time past. Private firms contributed two-thirds of the necessary money for this work.

The Oil & Metals Bank, of Taft, has gone out of business and the First National Bank of Taft is now installed in the building used by the former corporation, and is doing business.

Oil has been struck on Section 6, 29-22, twelve miles north of McKittrick, at a depth of 1100 feet, by O. C. Heck. It is three miles from this well to the Belridge property.

Seventy thousand dollars has just been paid for seventy acres of land in Lost Hills. Chas. Cameron, of the Crocker National Bank of San Francisco, was the purchaser. It is believed he purchased in the interest of a newly formed syndicate, although it may have been for the "Crocker-Cameron" interests, which already hold considerable property in Lost Hills.

Just at present Lost Hills is "pretty slow," in the opinion of one operator, but with the completion of the Associated Pipe Line Company's new pipe-line into the field in a short time, a new impetus, it is believed, will be given operations there. The Universal, Associated, American Oilfields, Standard, Lost Hills Consolidated, Union Oil Company and a host of smaller companies, all formed very recently, are operating in the Lost Hills at present. It is stated the Universal has contracted 200,000 barrels to the Associated, but the report is not confirmed.

The Santa Fe Railroad has so increased its Midway output that it no longer needs to purchase oil from the Associated and has not done so for some time.

The Canadian Crude Oil Company, Section 31, 32-24, Midway, recently suffered a boiler explosion of terriffic force, with a fire, but the loss was not large. No one was hurt.

Consolidated Midway Chief Oil Company, leasing twenty acres on southwest quarter of Section 15, 32-23, near Taft, is said to be down nearly 800 feet with Well No. 1.

The Caribo Oil Company, Section 26, 31-23, is preparing to drill.

The Guaranty Pipe Line Survey between the West Side fields and Ventura is not yet completed, but will be at an early date, when construction of the famous project will be pushed.

The Associated has discontinued operating in the Elk Hills. The Government's action in the withdrawal cases is the cause.

The Western Water Company has received its last consignment of machinery and will soon be distributing H2O. to the limit of its capacity.

Los Posas Oil Company, Section 33, 31-23, past 1800 feet with 8-inch casing, is nearing live san.d

The Zierath Combination Drill Company announce that the Midway Southern Well No. 2, at Pentland Junction, near Maricopa, is now down about 1850 feet with a Zierath Combination rig. The Zierath rig has stood every test so far with flying colors. Hard packed sand and gravel, hard shell, hard sand rock, quicksand and water, gumbo, yellow clay and gravel, boulder, conglomerate, hard blue shale and everything excepting the oil sand has so far been passed through in a manner entirely satisfactory to the Zierath people, as well as the Midway Southern.

News from this District Written by
W. D. MALTMAN

Cat Canyon Busy

The Cat Canyon end of the Santa Maria field is probably the most active field in the State. With the construction of two railroads and two refineries, properties there located will hav the best possible facilities for marketing their production. The Pacific Coast railroad are extending their road from Sisquoc Station at the mouth of Cat Canyon to the Palmer Annex, Palmer and Dome Oil Company properties. The Palmer Annex (controlled by the Santa Maria Oil Fields, Ltd.), are rushing the work on their large refinery and the Pinal & Dome Refinery at Betteravia will soon be completed. The people behind the refinery at Hadley are preparing to double their capacity and will soon handle 50,000 barrels a month.

Palmer Oil Company and Palmer Union Oil Company

The merger of the Palmer and Palmer Union Oil Companies is the source of much discussion. The plan as outlined in an official letter recently sent to all stockholders is as follws: The Palmer Oil Company sell their entire holdings to the Palmer Union Oil Company and receive in payment for same, one 6 per cent bond and one share of Palmer Union Oil Company stock, for each share of Palmer Oil Company stock. The Palmer Union Oil Company. will issue $3,000,000.00 worth of bonds of which $1,000,000.00 will be retained for future development of its property

The Palmer Union Oil Company, will have approximately 2,000,000 barrels of oil sold at a very good price and with the present production of the Palmer wells and the bringing in of three new wells, the company will have a substantial income.

New Pennsylvania Petroleum Company

The Cat Canyon well of the New Pennsylvania Petroleum Company is being finished in ninety feet of very good sand after passing through several strata. The heaviest six-inch casing obtainable has been installed and is being perforated. From all appearances this will be one of the big producers of the field. The management of New Pennsylvania deserves great credit for the persistency and ability they have shown in drilling this well. With their Cat Canyon well completed, the greater part of the company's expense will be done away with; and with the continued good production of the four wells in the old field, increased dividends should soon be forthcoming.

Brooks Oil Company

The air compressor installed by the Brooks Oil Company has proved a complete success and well No. 2 is now doing about 500 barrels a day with a very strong gas pressure which indicates that a gusher will ultimately result. The company is making daily shipments to the refinery at Hadley via the Pacific Coast railroad. They have a six-inch line from the property to Sisquoc depot where loading racks have been built.

Santa Maria Midway Oil Company

At a depth of two thousand feet there is a very strong gas pressure and a slight showing of oil in well No. 1 of the Santa Maria Midway Oil Company operating in Tepusquet Canyon just northeast of Cat Canyon. The developments in this well are creating much interest among oil operators in that vicinity.

Princess Oil Company

The casing has been landed in Princess No. 1 and bailing will soon be in progress. Several hundred feet of oil sands were encountered and the well is finished in a rich oil bearing shale which gives promise of a high grade oil. Princess No. 2 is down 2100 feet and is reported to be making good headway.

Summit Oil Company

After considerable difficulty with collapsed casing the Summit Oil Company have resumed drilling in their No 1 well on the Witzen tract at a depth of 2300 feet. The formation continues to be very favorable.

Santa Maria Petroleum & Pipe Line Company

Well No. 2 of the Santa Maria P. & P. L. Company, is making very rapid progress on the Henderson tract and has attained a depth of 2115 feet; this is considered record drilling.

West Oil Company

Immediately adjoining the New Pennsylvania's Cat Canyon lease, the West Oil Company are completing their No. 1 well. There is a heavy gas pressure and a good live oil sand. The well will be put on the pump as soon as bailing is completed.

Santa Maria Enterprise

Just south of the New Penn and Brooks properties, the Santa Maria Enterprise is bringing in their No. 1 well; a good showing of oil and gas is reported.

Dome Oil Company

The Dome Oil Company are awaiting the completion of the Pacific Coast railroad extension to their Cat Canyon property before they increase their production to any extent. The asphalt business throughout the country is increasing so rapidly that there is a large field for the sale of the product.

More pipe lines means larger markets ultimately. In the meantime those already doing business in California have all they can do.

Oil engines of the Diesel type are going to drive more ships in the future than are now being propelled by oil fueled steamers, according to European authorities.

A total expenditure of $966,920 is the cost estimated by the Guaranty Pipe Line Company's engineers for the entire construction of their Midway-to-the-Sea pipe line.

Foreign Notes

The oil fields of Japan, comprising Sachilin, Hokkaido, and other fields in the provinces of Mutpu, Ugo, Utzen Echigo and Shinamo, and along the coast of the Sea of Japan, has increased from 45,000 barrels in 1888 to 1,727,300 barrels in 1907. The increase is due to American methods, used since 1890. Of the provinces, Echigo produces 99 per cent of the total output. (The "California Derrick" has four subscribers in Echigo).

The rights of English companies operating in Maikop have been granted official recognition by the Russian Government, thus stimulating interest in and encouraging operations there by British backed corporations.

A large gas well, good for 28,000,000 cubic feet per day, has been drilled in at Bow Island, Alta, Canada. Well has caused great excitement.

The Tustanowice field, Galicia, is being completely ruined by water breaking into the oil formations. A huge and terrible loss is inevitable. They do not know how to shut off the water; should employ Thos. Hayes, of Coalinga cementing fame, now with the Burmah Company in India.

Great oil discoveries are reported in the neighborhood of Taiyuenfu, China. It is estimated that six million dollars in capital would not be more than enough to develop the district.

Recent Assessments

Following are the names of companies which have recently levied assessments against their outstanding stock; home of company; amount per share; date of delinquincy; date of sale:

Anaconda Petroleum Company, Fillmore, Cal.; 1 cent per share; delinquent October 10th; sale date October 26th.

Azores Oil Company, Hanford, Cal.; 10 cents per share; delinquent October 9th; sale date October 28th.

Boychester Oil Company, Coalinga; 5 cents per share; delinquent September 25th; sale date October 16th.

Combined Oil Company, San Francisco; 1 cent per share; delinquent October 25th; sale date November 11th.

G. R. Oil Company, Visalia, Cal.; 1½ cents per share; delinquent October 10th; sale date October 21st.

Hill Top Oil Company, Santa Paula; 2 cents per share; delinquent September 27th; sale date October 25th.

John Kern Oil and Development Company, Fresno; 5 cents per share; delinquent September 18th; sale date October 4th.

Kern Petroleum Company, San Jose, Cal.; 5 cents per share; delinquent October 24th; sale date November 13th.

Lakeview Annex Oil Company, Los Angeles; 1 cent per share; delinquent October 6th; sale date October 26th.

Lemoore Oil Company, Lemoore, Cal.; 1 cent per share; delinquent October 14th; sale date November 4th.

Maricopa Visalia Oil Company, Visalia, Cal.; 2 cents per share; delinquent October 12th; sale date October 30th.

Miners Oil Company, Los Angeles; 1 cent per share; delinquent September 8th; sale date October 2nd.

Panama American Oil Company, Los Angeles; 5 cents per share; delinquent October 5th; sale date October 26th.

Rose Oil Company, Los Angeles; one-third of a cent per share; delinquent September 11th; sale date October 2nd.

State Oil Company, of California; 12 cents per share; delinquent October 10th; sale date November 9th.

Sunpark Oil Company, Los Angeles; 1 cent per share; delinquent October 5th; sale date October 26th.

San Francisco Midway Oil Company, San Francisco; $8.00 per share; delinquent September 16th; sale date October 4th.

The M. K. & T. Oil Company, Oakland; 20 cents per share; delinquent October 2nd; sale date November 4th.

Welling Oil Company, Oakland; 4 cents per share; delinquent October 6th; sale date October 24th.

W. M. & M. Oil Company, Fresno; 10 cents per share; delinquent October 5th; sale date November 9th.

Patents Recently Granted

The following recently granted patents of interest to the oil trade are reported expressly for the California Derrick by J. M. Nesbit, patent attorney, Park Building, Pittsburg, Pa., from whom printed copies may be procured for 15 cents each:

Swab, J. B. Kline, Milton, W. Va., assignor to Herman B. Hogg, Parkersburg, W. Va., 1,003,280.

Pipe forcing jack, J. E. Hilgers, Middleton, Wis., 1,002,398.

Apparatus for refining petroleum, M. J. Trumble, Los Angeles, Cal., assignor to Trumble Refining Co., same place, 1,002,474.

Treatment of petroleum, J. A. Dubbe, Santa Monica, Cal., 1,002,570.

Coupling jar, W. E. Murrin, San Francisco, Cal., 1,002,601.

Well drilling tool, C. E. Wilcox, Bakersfield, Cal., 1,002,793.

Crown block for well drilling rigs, A. C. Zierath, Los Angeles, Cal., assignor to Zierath Combination Drill Co., same place, 1,002,952.

Combined speed regulating air cushion and emergency jarring device, R. M. Downie, Beaver Falls, and J. L. Downie, Downieville, Pa., assignors to The Keystone Driller Co., Beaver Falls, Pa., 1,002,971.

Feed device for drilling rigs, L. E. Shoup, Franklin, Pa., 1,003,011.

Oil well valve raiser, Harry Sark, Bluffton, Ind., 1,003,207.

Well digging apparatus, C. B. Martin, Portland, Ore., 1,003,284.

Elevator for well casings, J. F. Thompson, Marietta, O., 1,003,546.

Elevator for well casings, J. F. Thompson, Marietta, O., 1,003,546.

Wire rope or cable, Thomas Gore, Brooklyn, N. Y., 1,003,597.

Sand pump, F. L. Casper, Weiner, Ark., 1,003,874.

Rod coupling, H. L. Barrickman, Richwood, W. Va., 1,003,973.

Meter connection, G. W. McKee, Rockford, Ill., assignor to Eclipse Fuel Engineering Co., same place, 1,004,057.

Working barrel for oil well pumps, Daniel Daniels and L. P. Burgess, Los Angeles, Cal., 1,004,151.

Process of purifying oil, W. J. Travers, Olinda, Cal., 1,003,219.

Gripping device for tubing and casing, C. F. Cater, Pleasant City, Ohio, 1,004,366.

Well-driving point, J. H. Berky, River Park, Ind., 1,004,528.

Process of treating hydrocarbon oils, W. P. Bending, Los Angeles, Cal., 998,670.

Process of refining oil, H. G. Burrows, Orcutt, Cal., 998,837.

Cable clamps, C. A. Butler, Bartlesville, Okla., 999,006.

Trip mechanism for well sinking machines, H. M. Haight, Winnebago, Minn., 999,026.

Blow valve for gas wells, Alphonso N. Alten and Otto David, Avon, Ohio, 999,731.

Cable clamp swivel, M. J. Delmore, Piru, Cal., 999,967.

Pipe-thread protector (2), D. J. Cable, Pittsburgh, assignor to Frick & Lindsay Co., same place, 1,000,374 and 1,000,375.

Well drilling machine, H. A. Thomas and A. M. Thomas, Driscoll, N. D., 1,000,459.

Packer for operating gas, water, and oil wells, A. S. Cooper, Los Olivos, Cal., 1,000,583.

Apparatus for obtaining gas from wells, A. S. Cooper, A. S. Cooper, Los Olivos, Cal., 1,000,669.

Cut-off for gas lines, H. C. Grimes, Terra Alta, W. Va., assignor to Grimes Automatic Gas Regulator Co., Elkins, W. Va., 1,000,799.

Fishing tool for oil or other wells, G. A. Kemper, Newberne, W. Va., 1,000,817.

Oil pump, J. B. Davis, Dayton, Ohio, assignor to The American Oil Pump and Tank Co., same place, 1,000,965.

Well casing slitter an dperforator, F. M. Lovell, Downey, Cal., 1,001,205.

Well casing, B. U. Heister, Grand Ridge, Ill., 1,001,523.

Cutter for well casings, Harry Mead, Coalinga, Cal., 1,001,548.

Drilling device, R. R. Sanderson, Orrville, Ohio, 1,001,560.

Well strainer, M. E. Layne, Houston, Texas, 1,001,655.

Oil filter, F. E. Collins, Conshohocken, Pa., 1,001,929.

Combined drill and under reamer for wells, Hoyl Jam, Bakersfield, Cal., 1,002,152.

Perforator for well casings, Hyl Jam, Bakersfield, Cal., 1,002,153.

Southern California Petroleum Company, San Diego; incorporated August 26, 1911; capital, $10,000; directors, L. F. Miller, Chas. Wermouth and R. L. Goter Wright, all of San Diego.

Wheeler Ridge Oil Company, Los Angeles; incorporated September 8, 1911; capital, $150,000; directors, Geo. F. Wheeler, Baltimore; J. R. Pinkham, Geo. W. West, Philo L. Lindley, all of Los Angeles; Walter Snook, Maricopa.

Foreign Notes

The restrictions on the storage of "motor spirit," as gasoline is termed in England, coming in for severe condemnation in the "right little, tight little isle," and a storage system or rather regulations permitting storage of this product is being urged by various English trade journals. The storage of this commodity in garages in any quantity is not allowed in the old country.

Ralph Arnold

Consulting Geologist and Engineer

726 H. W. Hellman Bldg, Los Angeles

Phone: Home A 9615 Cable Address Aonoil Code: Bedford McNeill

UNION TOOL COMPANY

Manufacturers of Up-to-Date

Oil Well Drilling and Fishing Tools

FACTORIES

Los Angeles, Cal. West Chicago, Ill.

BRANCHES

Moron, Cal. Coalinga, Cal. Orcutt, Cal.

Issued by San Francisco Stock Exchange for the quarter ending September 30, 1911.

COMPANY	PRICE Bid	Asked	No.	DIVIDENDS Date	Rate	Total Dividends
Alma Oil Company	.....	.....	19	6 12 11	.03	216,600.00
Amalgamated Oil Co	.....	.....	32	9 15 10	1.00	1,600,000.00
Am. Petroleum (prefd)	.....	.....	21	3 1 11	.66	
Am. Petroleum (com)	.....	.....	21	3 1 11	.66	2,422,573.25
Amy	.....	.....	..	.....	....	.....
Apollo	.....	.....	2	3 20 05	.01	4,000.00
Associated Oil Stock	46.62½	.....	4	3 1 07	1.50	1,548,36 .54
Associated Oil Bonds 5s	.....	.....	..	.....	....	.....
Bay City	.....	.60	8	10 15 10	.10	155,000.00
Brookshire	.....	.....	45	1 1 10	.01	442,500.00
California Midway	.....	.....	..	.....	....	.....
California Oil & Gas	.....	.....	..	.....	....	.....
Calif. Seaboard Oil Co	.....	.....	..	.....	....	.....
Caribou Oil & Mining Co.	.95	1.00	72	4 15 11	.02½	962,816.49
Claremont	.96	1.00	76	9 28 11	.01½	502,500.00
Coalinga Central	.....	.....	..	.....	....	.....
Coalinga Mohawk	.50	.....	..	.....	....	.....
Coalinga National	.15	.16	..	.....	....	.....
Coalinga Pacific	.....	.....	18	12 23 09	.10	107,250.00
Columbia	.....	.....	72&73	9 25 11	½&½c	534,671.41
Cons. Midway	.04	.05	..	.....	....	.....
Cresceus	.....	.....	..	.....	....	.....
Dabney	.....	.....	..	.....	....	.....
Del Rey	.....	.....	9	7 1 11	½c	35,317.50
De Luxe	.....	.....	..	.....	....	.....
Dominion Oil Co	.....	.....	..	.....	....	.....
El Dorado	.....	.....	..	.....	....	.....
Empire	.....	.....	8	12 31 10	.10	16,000.00
Enos	.....	.50	..	.....	....	.....
Globe	.....	.....	22	10 1 10	.01	93,000.00
Esperanza	.....	.....	26	12 27 09	.02	49,450.00
Euclid	.....	.....	43	2 1 11	½c	143,250.00
Four Oil	.....	.....	68	2 25 10	.01	213,000.00
Globe	.....	.....	..	10 1 10	.01	93,000.00
Graciosa	.....	.....	..	.....	....	.....
Gypsy	.....	.....	4	8 4 10	.07	40,000.00
Home	.....	.....	A35	9 20 11	.01½	508,000.00
Homestake	.....	.....	52	9 14 11	.10	84,250.00
Illinois Crude	.04	.....	40	6 1 10	.01	94,000.00
Imperial	.....	.....	71	7 18 10	8.00	4,000,000.00
Jade Oil Co	.....	.....	..	.....	....	.....
Junction	.....	.....	8	6 1 09	.01	20,000.00
Kern River	.....	.....	50	1 1 11	.10	120,000.00
Linda Vista	.....	.....	25	6 9 11	.01	92,124.00
Lucile	.....	.....	16	12 20 09	.10	42,727.04
Mascot	.....	.....	17	6 20 11	.02	190,000.00
Maricopa National	.22	.25	..	.....	....	.....
Maricopa 36	.....	1.70	..	.....	....	.....
McKittrick	.09	.....	..	.....	....	.....
Mecca	.....	1.50	6	7 15 09	.03	71,825.00
Midway of Oregon	.....	.....	..	.....	....	.....
Midway Premier	.40	.....	..	.....	....	.....
Monte Cristo	1.50	1.65	77	9 21 11	.30	1,190,000.00
Mountain Girl	.....	.....	1	8 4 10	.02	7,000.00
Mexican Petroleum	.....	.....	56	4 1 11	.01 1-3	4,113,350.01
M & M	.....	.....	..	.....	....	.....
Nevada County	.....	.....	3	10 13 08	.04	40,000.00
Nevada Midway	.....	.....	..	.....	....	.....
New Penn. Petroleum	.47	.49	16	9 15 11	.00 1-2	55,000.00
Occidental	.15	.....	..	.....	....	.....
Orcutt Oil	.....	.....	..	.....	....	.....
Pacific States	.....	.....	..	.....	....	.....
Palmer	1.05	1.10	28	9 25 11	.01	575,780.42
Palmer Union	.....	.....	..	.....	....	.....
Parraffine	.....	.....	23	9 15 11	.01	78,000.00
Patricia	.....	.....	..	.....	....	.....
Peerless	.....	.....	78	6 30 11	.24	825,000.00
Piedmont	.....	.....	7	5 9 10	.01	26,877.30
Pinal	.....	.....	62	10 30 10	.10	991,835.00
Premier	.....	.....	4	7 20 10	.01	40,000.00
Producers	.....	.....	4	5 17 11	.60	216,000.00
Pyramid	.....	.55	..	.....	....	.....
Radium	.....	.....	..	.....	....	.....
Record	.....	.....	28	9 15 11	.15	242,500.00
Republic	.....	.....	..	.....	....	.....
Rice Branch	.50	.....	23	12 31 10	.03	126,000.00
Rico	.....	.....	..	.....	....	.....
Sacramento	.47	.....	..	.....	....	.....
S. F. & McKittrick	.....	.....	31	11 1 10	.30	460,000.00
Sauer Dough	1.00	.....	68	9 21 11	.02 1-2	514,061.00
Section 7	.....	.....	..	.....	....	.....
Section 25	.....	.....	19	9 25 11	.50	210,000.00
Sesnon	.....	.....	16	3 7 11	.07	171,000.00
Shawmut	.....	.....	4	4 11	.03	35,000.00
Silver Tip	.90	.....	12	9 26 11	.02	42,000.00
Sovereign	.....	.18	21	7 1 11	.01	110,000.00
S. W. & B.	.20	.22	7	9 10 09	.01	41,470.00
State	.....	.....	..	.....	....	.....
Sterling	.....	.....	23	3 15 10	.12 1-2	778,250.00
Sunset Monarch	.....	.....	..	.....	....	.....
Superior	.....	.....	15	12 17 10	.01	67,500.00
Traders	.....	.....	17	5 15 10	1.00	209,146.50
Turner	.90	.....	..	.....	....	.....
United Petroleum	.....	.....	121	9 20 11	....	2,994,545.02
Union	99.62 1-2	100.50	182	9 20 11	....	9,356,811.95
United Oil	.55	.57	12	9 10 11	.03	201,254.96
West Coast (com.)	.....	.....	..	.....	....	.....
West Coast (perfd)	.....	.....	6	9 1 10	2.00	124,896.00
West Shore	.....	.....	47	12 21 08	.05	235,000.00
Wolverine	.....	.....	..	.....	....	.....
W. K. Oil	.....	2.90	4	9 20 11	.03	60,000.00
Western Union	.....	.....	..	2 25 11	.50	494,950.00
Yellowstone	.....	.08	1	5 08	.01	8,000.00
Storage Certificates	No Quotation					
Total dividends paid by former listed companies since absorbed or sold						1,993,136.12
Total Dividends Paid to Date						$38,950,482.40

Government to Take Action Against Southern Pacific, December 1st.

(From the Midway Driller)

The long anticipated suits to test the right of the Southern Pacific railroad to the oil contained in the California railroad grants will be filed in Los Angeles about December 1, says a report from that city. The first suit will be a blanket attack on 440,000 acres of railroad lands in which are included the railroad holdings in Coalinga and other rich oil belts in Central California.

B. D. Townsend, special assistant to Attorney General Wickersham, who has been preparing for the suits for several months, is now in Washington to report to his chief. He stated Wednesday that the investigation and the collection of data preliminary to the filing of the actions are now complete, and that the papers for the actions are in course of preparation.

Special Agents Dezendorf and Helm of the land division of the department of justice, who have been conducting the massing of the facts in the cases, are rounding up a few additional details, following which the actions, which are said to involve property now worth nearly a billion dollars, will be commenced.

It is now declared, on the part of the government, that the department of justice will enter the contest with every phase of the cases covered as a result of the investigation which has been in progress, and that the railroad will have to face one of the most serious situations it has ever encountered in the courts.

A speedy determination of the legal questions involved may be had in the cases. It is thought that the original action will be fought out on questions of law presented by the pleadings and that the case can be brought up to the United States Supreme Court without much delay. The main contention of the railroad will be that the statute of limitations has run against the government for the patents held by the railroad. The government will contend that the oil in the lands was not conveyed in the patents and that the statute of limitations has no bearing on the question of the ownership of the oil.

United States Circuit Judge Ross has already decided in favor of the railroad in a case in which this question was raised against the railroad by private individuals, but it is held that the government is in an entirely different position and that the legal aspects of the case will be presented in a new light. If it fails to establish its contention in the lower court, the department of justice will press the case to the Supreme Court for final decision.

FINEST ON WHEELS

Sunset Limited

EXCESS FARE
TRAIN DE LUXE
BETWEEN
SAN FRANCISCO AND NEW ORLEANS
TWICE A WEEK.
FIRST DEPARTURE FROM
SAN FRANCISCO
DECEMBER 5TH.

Electric Lighted—Steel Car Train—
Barber Shop—Shower Bath—
Stenographer—Ladies' Maid—
Manicure—Hairdresser.

Watch for later
announcements.

SOUTHERN PACIFIC

TICKET OFFICES:

FLOOD BUILDING, PALACE HOTEL,
THIRD AND TOWNSEND STREETS DEPOT,
MARKET STREET FERRY DEPOT,
SAN FRANCISCO.

THIRTEENTH STREET AND BROADWAY,
OAKLAND.

600 SOUTH SPRING STREET,
LOS ANGELES.

Holiday Greetings

At the close of this, the fourth year of our business, which has been one of the most prosperous, we wish to thank our many friends for the full support and hearty co-operation they have given us.

For our existence and prosperity, we are directly responsible to you.

In appreciation of these facts, we have always endeavored to give you the very highest grade of materials with the best possible service known to us.

During the year 1912, upon which we are about to enter, we shall continue the same policy as in the past and we trust our trade will feel as thoroughly satisfied with our past treatment as we do of their's and that the same pleasant relations shall continue.

Again wishing you a PLEASANT CHRISTMAS AND A PROSPEROUS NEW YEAR, we are,

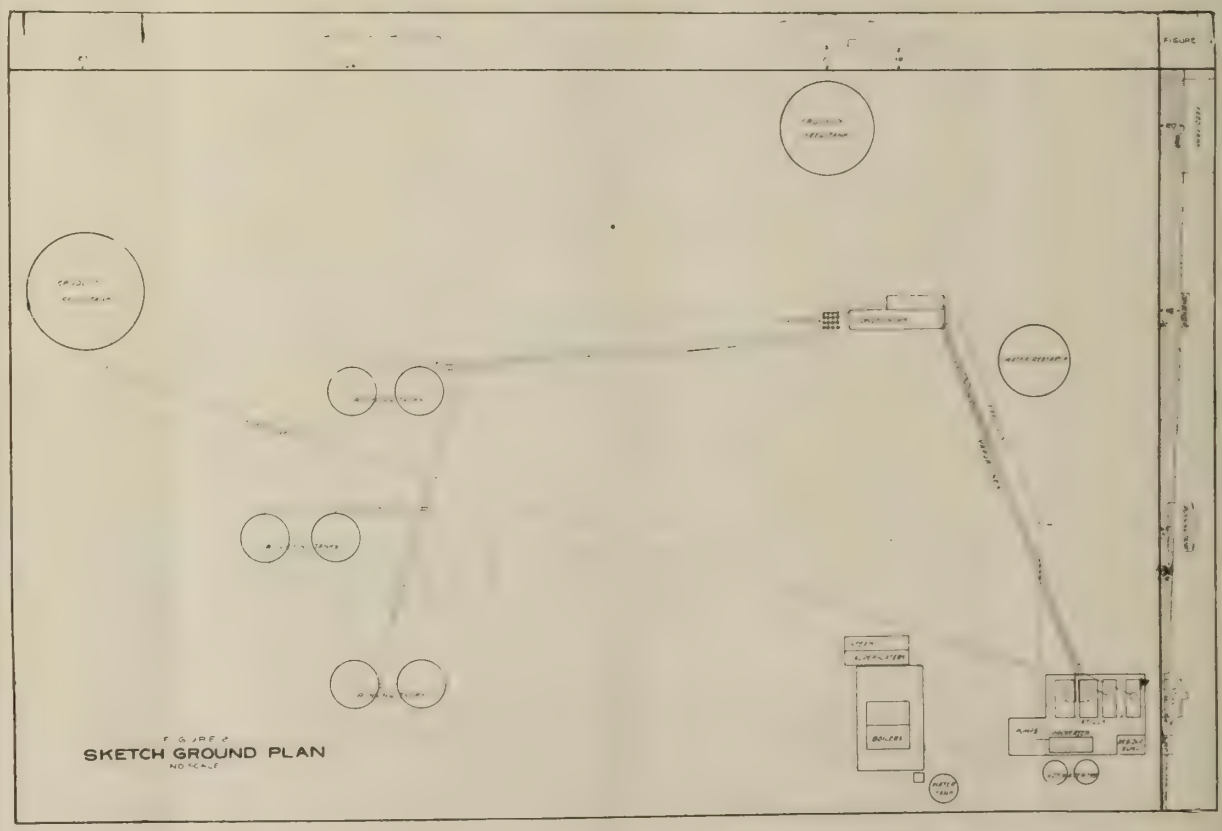
Yours for service,

J. F. LUCEY CO.

Stores: Los Angeles, Bakersfield, Coalinga, Maricopa, Taft, Shale and McKittrick.

Offices: 1001 Kohl Bldg., San Francisco; 50 Church St., New York; Fullerton, Cal.

Sketch of the Ground Plan of the Pinal-Dome Oil Refining Co's. Plant at Betteravia, Cal.



Figures 1 and 2
Illustrations for Paul W. Prutzman's Descriptive Article. **See Opposite Page**

CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

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Description of the Pinal-Dome Company's Topping Plant at Betteravia, Cal.

Written Especially for the California Derrick

By PAUL W. PRUTZMAN,

Consulting Chemist and Petroleum Engineer, Consulting Scientific Editor of the California Derrick.

The following description of the topping plant of the Pinal-Dome Refinnig Co., constructed during the current year at Betteravia, may be of interest only because of certain rather unusual engineering difficulties encountered in its design. Aside from these features the plant is quite conventional in its layout, and differs but little from a number of other plants in this State.

This plant was intended solely for use in topping, and, therefore, no agitators or other apparatus for chemical treatment were included. The products specified were gasoline and engine distillate, of the usual qualities, to be made water white and sweet without treatment. No specifications were set for the fuel residue, other than that it was to be of saleable quality as regards gravity, viscosity and flash point; the proportion of water and sediment, however, was to be not over 2 per cent at any time, and on an average not over 1 per cent by the usual gasoline-bisulfid centrifuge test. Capacity was to be 1200 barrels per day, crude as received, heating of stills or other distillation apparatus was to be by steam, and it was desired to depend entirely on gravity for the handling of oil between the crude tanks and the running and residue tanks, pumping to be confined to the lifting of finished oils from running tanks to the storage tanks.

Crude Used

The purpose of this plant was to handle tank drainings from several leases in the old or West Side field at Santa Maria, and provisions were therefore made to handle a very wet oil. As is well known, while most of the wells in this field deliver a fairly dry oil, a few make some water, and this water, unlike that of most of the valley fields, is so thoroughly emulsified with the oil as to resist all ordinary methods of separation. The water is found in the oil in the form of a brown paste, which may be separated from the oil in small quantity by dilution and centrifuging, and when thus separated is seen to consist of microscopic particles of water, each surrounded by a skin of oil, the whole forming a yellowish jelly-like emulsion of extreme permanence. When washed clean by means of gasoline, this emulsion still contains some 20 per cent oil to 8 per cent water, but as separated by settling and draining, it is rarely practicable to raise the water percentage above 30 per cent, and the sludge supplied to this plant actually ranged between 30 and 22 per cent water, with an average of about 26 per cent. The yield of gasoline at 6- degrees Beaume, figured on the net oil, averaged about 8 per cent; of engine distillate at 52 degrees Beaume about 10 per cent; leaving a fuel residue of about 18 degrees Beaume. The gravity of the crude as received, averaged about 22.5 degrees Beaume, equivalent to 27 degrees Beaume for the dry oil.

This wet oil, in spite of its low viscosity, is quite frothy, foaming taking place attwo points in the distillation, the first when oil starts to run, the second at or near the point where the last of the water leaves the still. This second froth is much the worst, and considerable care and patience are required, when running stills in the usual manner, to prevent filling the vapor line with emulsion and ruining the light distillate. This difficulty was entirely avoided by the arrangements made for continuous running.

Removal of Water

Because of the impossibility of separating the water by tanking, it was necessary to provide for its removal by heat. Without entering here into a discussion of the relative merits of shell stills and pipe stills, it is sufficient to say that it was decided to use shells for this case. Two methods are available here, one to completely distil off the water, passing it through

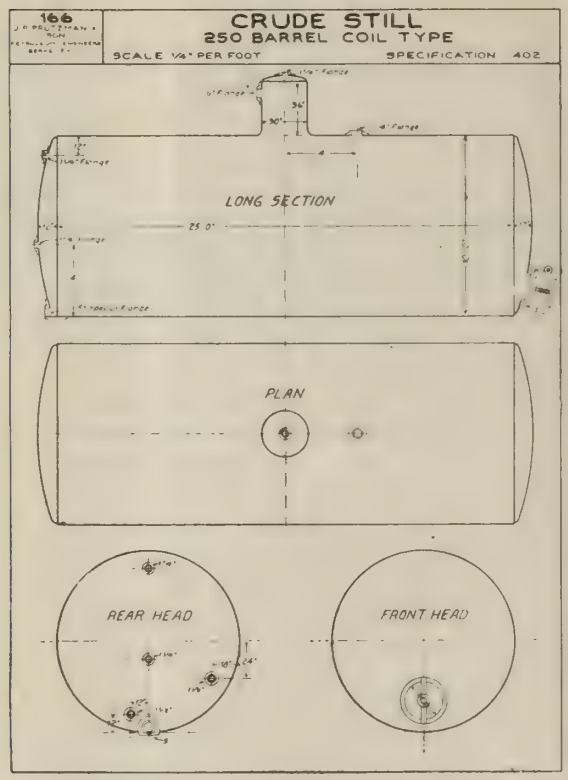


Figure No. 3

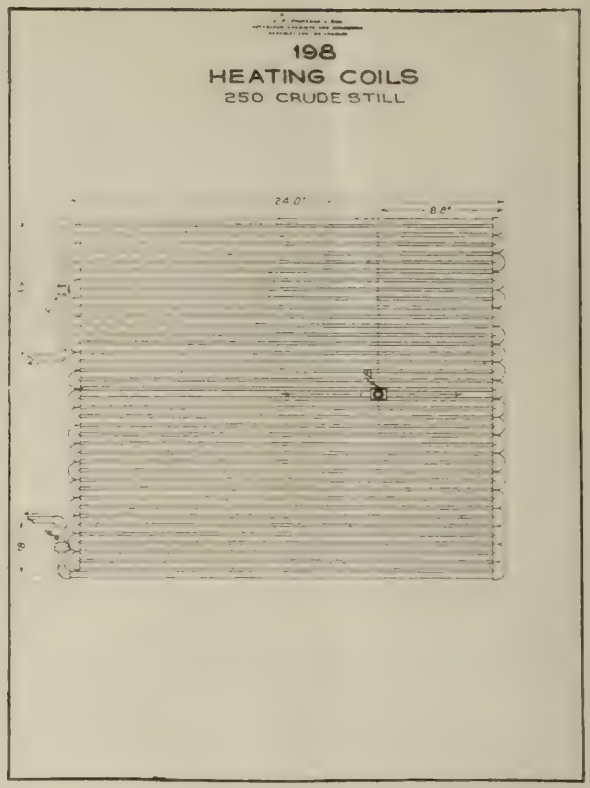


Figure No. 4

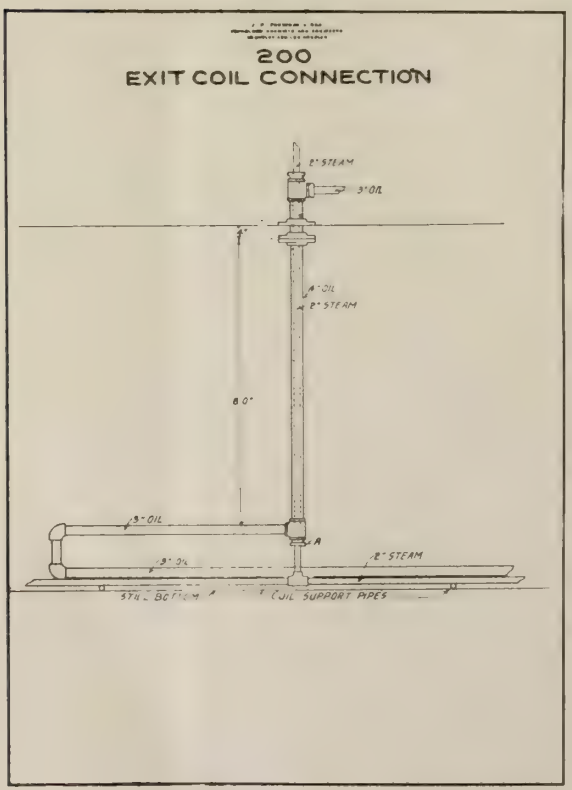


Figure No. 5

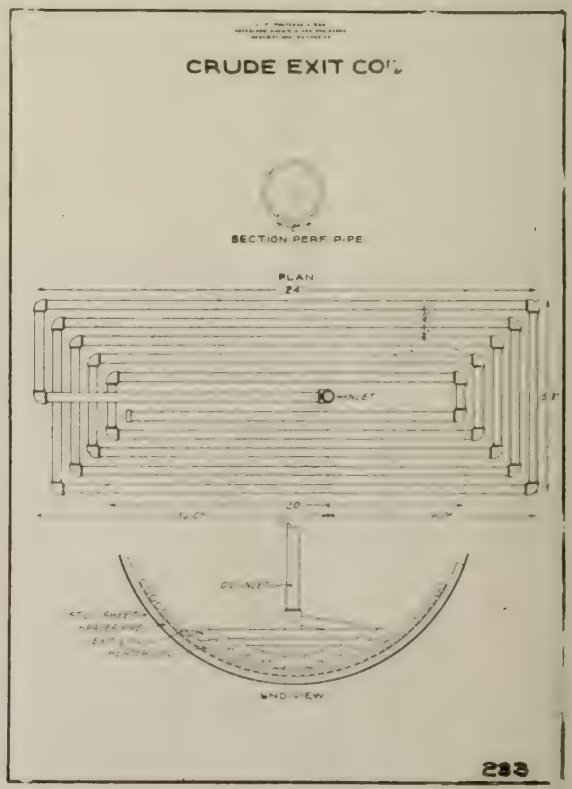


Figure No. 6

(Paul W. Prutzman, Continued)

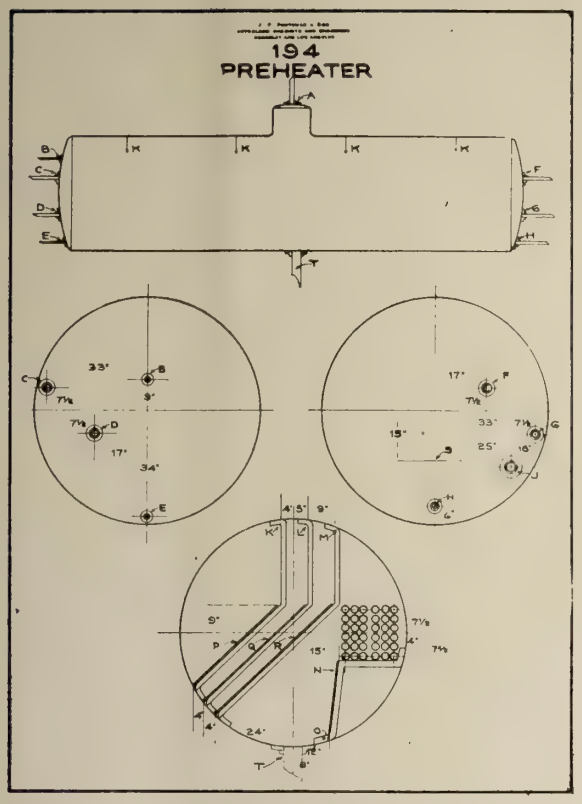


Figure No. 7

the condenser with the distillate, the other to run off part of the water and distillate, up to the point where the oil "breaks," allow the remainder of the water to settle out, and then remove the balance of the distillate. The second method may be worked intermittently in a single still, but only at the cost of greatly reduced capacity, while if arranged to run continuously it would require a second still, with a large stripping tank between the two, and add greatly to the complication of operating. For these reasons, and in the belief that radiation of heat during settling and reheating would nearly or quite balance the saving in fuel due to the lessened evaporation of water, the first method was selected, and arrangements made to carry all the water through the condensers, or "over the top."

Site of Plant

The site selected was at Betteravia, some five miles west of Santa Maria, on rolling ground near Laguna Guadalupe. This location is about one mile fsrom the Southern Pacific spur at Betteravia Station, but has rail connections to Santa Maria, Orcutt, San Luis and Port Harford by the narrow gauge (South Pacific Coast), and to Cat Canyon and the main line at Guadalupe by the new broad gauge branch (Santa Maria Valley Railroad). Oil is supplied from the field by a pipe-line, while gas for fuel is taken from the gas line which terminates at Guadalupe.

The lay of the ground is only moderately favorable for a gravity plant. The confluence of two shallow draws leaves a flat-topped bench of some six acres, sloping away on two sides in a fall of some three feet six inches to the 100 feet. The total fall approximated twenty-five feet, but on account of the gentle slope it was impossible to use more than 18 feet of this without unduly scattering theplant—this was divided as shown in Figure 1.

The soil on this bench or knob was a hard adobe, giving excellent foundations, but farther down the slope, where stills and boilers were located, a slushy streak was found just below the surface, and it was necessary to go down from four to six feet for a footing.

Layout and Method of Operation

The plant consists essentially of two crude stills, arranged for continuous operation, a cooler for the residue arranged to act as a preheater for the crude, storage and feed tanks for crude, two gasoline stills, condensers, running tanks and store tanks for distillates, pumps and pipe-lines, boilers and superheaters for steam. The arrangement is shown by ground plan, Figure 2. (Note: Figures 1 and 2 have been combined for the sake of space economy in these pages).

The manner in which these stills were handled was as follows: Crude oil was stored in Tanks 1 and 6, which, as will be seen from the profiles, were about the level of the stills. From either of these tanks the oil fed by gravity to the preheater, sketched in Figure 7. Entering at the bottom, this oil passed through a series of baffles which mixed it thoroughly, and over a set of coils on which it was heated, by the residue and by the condensed water from the still heater coils. Passing out of the dome of preheater, the hot oil was carried overhead through a jacketed line branching to the two crude stills, where it was regulated by slotted stop-cocks, with gates for shutting off without losing adjustment. Passing the regulating cocks, the oil entered stills, where it was boiled, the vapors of water and distillate passing off through condensers to running tanks in the usual manner while the residue remained in the still. Level of oil in still was kept constant by means of a drain pipe with regulating cocks and shut-off valve, through which it was drawn to a coil in the preheater, and thence to the residue sump tank, from which it was pumped at intervals to storage. This arrangement is shown in profile in Figure 8.

Crude Stills

For reasons not connected with efficiency, it was decided to use stills heated by steam coils, and this was done with some misgivings as to their workings. In practice, however, they gave better results than anticipated, and while their output is strictly limited, and their heat efficiency diminishes rapidly when overcrowded, they are extremely easy to manipulate, and as set and connected are probably at least as efficient as the ordinary fire still similarly used. The calculations on which this conclusion is based are given in a later paragraph.

Shells

The shells are of ordinary construction, and were made locally. Dimensions are shown in Figure 3. These shells were set on saddles or "H" blocks of concrete, 24 inches thick at the base, tapering to 18 inches at the top, following up the side of still to a height of one foot, and five feet deep on center line of still. These blocks had six-inch concrete footings, and were strongly reinforced with steel wire rope (old drilling line). These have proven very solid and substantial, and the stills are unusually steady, a very desirable feature where so many pipe connections are made.

The stills were given a two-inch covering of magnesia asbestos, and the riser pipes jacketed up to vapor line inlet. These still jackets never were more than hand warm outside, and radiation was reduced to the lowest terms.

As it was desired to get the bottoms of running tanks above the level of pumps, the condensers were placed on top of the hill, giving a lift of over ten feet from stills to vapor line. This would be doubtful practice with a heavy oil still, but the light vapors evolved from this oil rose readily, and the long rise did not in practice appear to be detrimental in the least, stills running freely at an almost imperceptible pressure. The large area of the vapor line—five inch diameter—probably conduced to this end.

Inside Connections

The heating and feeding arrangements in these stills are somewhat novel, and may deserve a detailed description. They consist, first, of steam coils, using moderately superheated

steam, and covering the entire bottom of the still. These heater coils are of two inch black pipe, forty runs the entire length or bottom in each still, let into close form malleable return bends, and taking steam at the center of coil, with outlets at the front of still at each side of coil.

These coils conform to shape of bottom, but are raised from the sheets by cross pieces of two-inch pipe, bent to curve of shell, and wired fast to coil pipes at each intersection. The coils as placed extended up the side of shell for approximately five feet from bottom center line. All connections to coil were by double swing joints, built up from ells and nipples, giving freedom to move several inches in each direction, but in use the coils shifted very slightly, and only a small leak developed in either coil.

The steam in these coils divided at the center as shown in Figure 4, "B" being the inlet, and "C-C" the outlets, which latter were reduced to 1½ inch and carried through flanges in front head of still, made fast with lock-nuts, and controlled outside by means of globe valves. Drainage from coils was taken into a header which carried it to a coil in the preheater, where it parted with all latent and most of its sensible heat, the cooled condensed water passing to boiler hot-well.

Besides the heating coils, a live steam connection to a perforated pipe along bottom was also made, but this was not used in continuous running, the steam consumption being out of proportion to its value as a heating agent.

Oil Feed

The oil feed was taken in through the same flange taking the steam inlet; oil pipe being a jacket around steam inlet, as shown in Figure 5. Near the bottom of shell the steam pipe was turned smooth and run through a bored bushing in the bottom of a tee in oil pipe (see "A," Fig. 5), making a slip joint only approximately oil tight, a slight leakage at this point being unimportant. From this tee the oil pipe was carried into a three-inch square spiral coil (Figure 6), lying directly on the steam coil, and terminating in a single run of perforated pipe.

The objects of this exit coil, which might not be apparent at first glance, were two. The first and most important was to do away with the admission of raw oil to the small body of oil in still, and which was continually being drained to the sump. That is, to prevent the possibility of a current of raw or partly reduced oil being set up between the inlet and the drain, the theory being that in this exit coil, which has a surface approximately equal to the normal heating surface of the still, and exposed to heat from the oil in still and also to conduction from heater pipes below, the entering oil would wholly or in large part be distilled inside the coil, and pass into the still in the form of a mixture of reduced oil and vapors, which would separate instantly. This theory seems to be borne out in practice, the proportion of water in the residue, even at double the usual rate of feed, being but a fraction of 1 per cent.

The second object was to secure circulation, making the perforated oil pipe take the place of the usual bottom steam pipe, and to secure regularity in running and to obviate bumping and frothing. This object was also very fully secured, the stills running smoothly and sweetly, while the froth, which would rise in the still to a height proportionate to the feed, would stand steady in one gauge for a considerable time. It will be understood that this added greatly to the ease with which stills were handled.

(To be Continued)

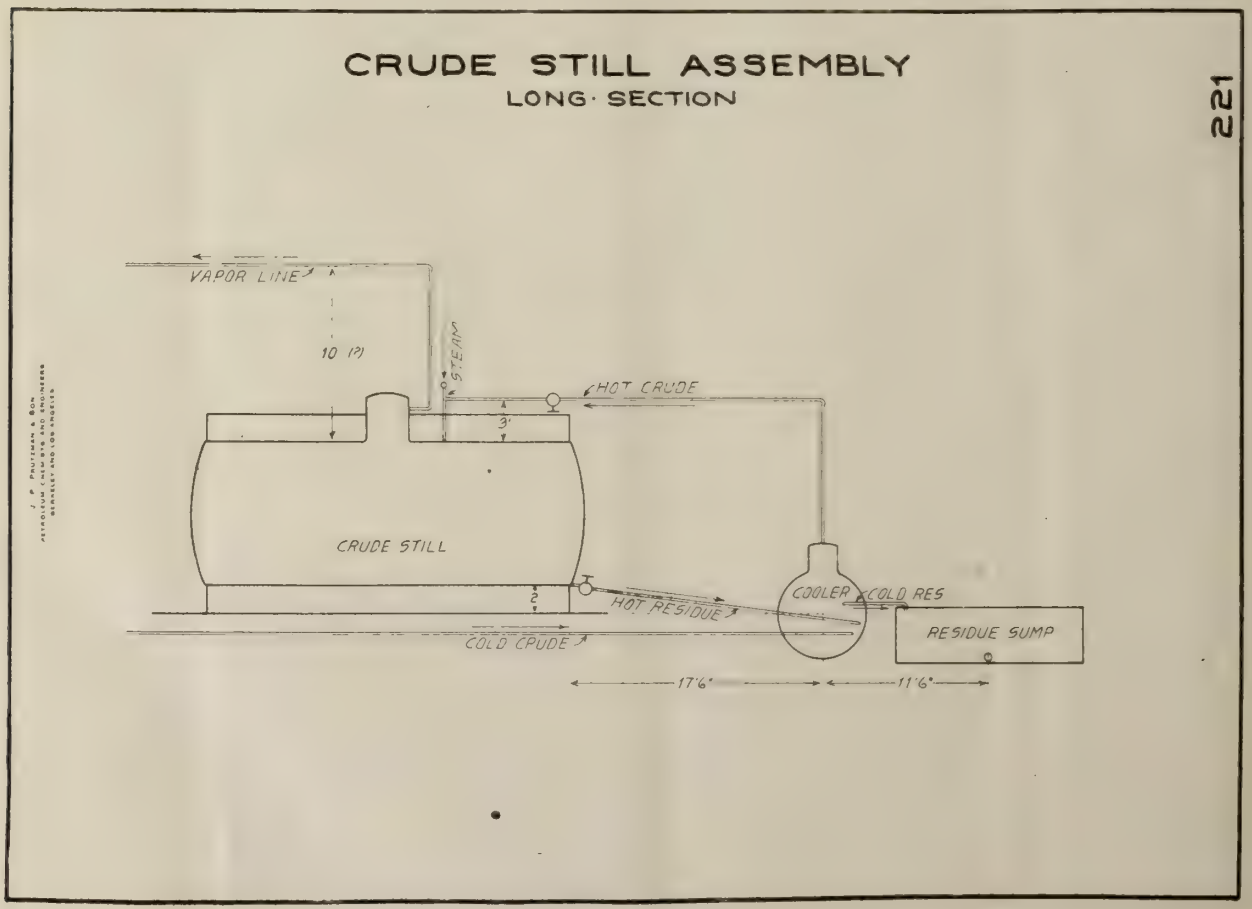


Figure No. 8

California Production for and Field Operations During October 1911

During the month of October the production of all the oil fields in California declined very slightly, the total output for the State being 7,283,434 barrels of every kind of oil, against a total production of 7,291,254 barrels for the previous month. Thus a falling off in production amounting in all to 7820 barrels is apparent, which is, of course, inconsequential, unless it may be taken as indicating a desire to curtail.

An interesting feature of these figures is the daily production. For while the month of September is possessed of thirty days, October, having thirty-one, makes the daily average drop more than would appear from the mere consideration of the drop of all the fields for the month. Therefore, while the daily average during September amounted to 243,042 barrels, that during October totaled but 234,949. Thus a discrepancy of no less than 9093 barrels per day is evidenced. From the point of view of an over laden market (or what the transporters term "overproduction") this slight drop is slightly encouraging and may tend to stiffen prices a little if the smaller production can be maintained, or, if the consumption shows the same increase that it did during October. Before taking up the consumption figures, however, it will be of interest to note the performance of the several fields.

First in production for the month comes Midway, with 2,092,075 barrels; an output which, tremendous as it is, yet fell off from that of the previous month by 40,576 barrels; September's production having totaled 2,132,651 barrels. Next came Coalinga with a production more than half a million barrels behind famous Midway, which is, without any question, the foremost oil producing section of the world. Coalinga's production totaled 1,553,735 barrels, which is exactly 538,340 barrels less than Midway's. Coalinga's produuction decreased by 25,195 barrels, probably as the result of the desire of the Coalinga operators not to glut the market more than they could help. After Coalinga comes Kern River. Production, 1,147,155 barrels. Falling off 17,845 barrels. Following Kern River is Santa Maria. Production, 552,022 barrels; gain, 90,212 barrels for month. This gain was due to the new gusher and to the splendid sustained production of the former biggest performers. Following Santa Maria comes the Fullerton-Brea Canyon district. Production, 510,097 barrels; loss, 7706 barrels from former month's record. Sunset, producing 443,579 barrels, dropped 27,091 barrels. McKittrick gained 11,313 barrels. Salt Lake and Los Angeles both drop slightly again. Lost Hills gained only 2250 barrels over last month despite the new gusher. Ventura's production was swelled some 2500 barrels, totalling 45,018 against 42,476 for the previous month. As for the other fields, the figures in our table tell exactly where they stand.

While the State's production decreased in the gratifying manner displayed by the analysis of the month's figures given in the above paragraph, the consumption, due to a steady expansion of the market for fuel oils, increased in a very pleasing degree. For whereas during the entire month of September the market consumed 6,369,518 barrels of oil, during October the usage and sale totaled 6,701,593 barrels; a splendid gain, amounting to 332,175 barrels. The sales advance, in fact, is a minimum in excess of 5 per cent over the sale of the previous month's product and is generally considered by the producers and marketers alike as being indicative of better times ahead for all. However, the entire lesson of over-production will be lost if the producers cannot stand the consumption gain and go to work to "produce their heads off" again. It is sincerely to be hoped that this will not be noted in the figures for the month to come.

The daily consumption during the month of September aggregated 212,317 barrels; for the month of October, 216,184 barrels. Daily gain in consumption, 3867 barrels.

The average daily surplus decreased in a manner to delight the most pessimistic. The drop was as follows:

	Barrels.
Average daily surplus in September	30,725
Average daily surplus in October	18,765
Drop in average daily surplus	11,960

If the producers, who hold prices in their own hands, did they but know it, would bring the average daily surplus down to nought, oil would bring more than 30 cents at the well on daily runs. However, as it is the increase in consumption (which means the enterprise of the marketers and the education of the consumers to the benefits of oil as fuel), rather than the decrease in production,—which was not so very great,—that is bringing about the reduction in the average daily surplus and consequently the average monthly surplus, the producer who goes to work to produce his utmost has no complaint to make if he receives small money for his product; in fact, it is against the average producer's efforts that the marketer decreases the monthly surplus. More credit is due to the marketer than the producer realizes.

Well Work in the Field

During October there were forty-three more wells producing than during the month previous. The totals for the two months were: October, 5142 wells; September, 5099 wells producing. There were twenty-six fewer wells being drilled during October than during September. Figures: October, 570 wells drilling; September, 596 wells drilling. Forty-four rigs were completed in September as compared with forty-seven in October. Sixty-seven wells were completed in October against seventy-nine in September. But eight were abandoned in October as against eleven in the previous month. The totals herewith presented covering the well work all over the State indicate a slackening in the rapid prosecution of the search for oil. Not going as greatly into detail as in our last monthly report on well work, we herewith give our table, which can be compared by those sufficiently interested to see the gain in number of wells drilling producing, completed, abandoned, etc., with that of the previous month. The table, however, shows exactly what is going on and where it is taking place, and is, as heretofore mentioned, very gratifying to those most deeply interested. Same follows:

Field.	County	Rigs Comp.	Drilling	Producing	Completed	Abandoned	Production Month
Kern River	Kern	....	4	1628	7	2	1,147,155
McKittrick	Kern	7	15	187	4	....	439,420
Midway	Kern	15	172	522	25	..	2,092,075
Sunset	Kern	5	48	210	8	..	443,579
Coalinga	Fresno	1	112	775	11	2	1,553,735
Watsonville	Santa Clara	....	1	5	....	..	3,720
Aroyo Grande	San Luis Obispo	1	2	6	..	3	900
Lompoc	Santa Barbara	1	6	23	1	....	74,600
Santa Maria	Santa Barbara	1	43	165	2	....	552,022
Summerland	Santa Barbara	....	2	130	....	..	6,400
Santa Paula	Ventura	2	34	266	3	1	45,018
Newhall	Los Angeles	....	4	78	....	....	12,062
Salt Lake	Los Angeles	5	14	267	1	..	243,208
Los Angeles	Los Angeles	....	....	415	....	....	36,276
Whittier - Coyote	Los Angeles	1	26	145	1	....	94,097
Puente	Los Angeles	1	1	56	....	....	2,570
Fullerton-Brea Canon	Orange	1	60	262	....	....	510,097
Lost Hills	Kern	6	24	2	4	....	510,0..
Salinas Valley	San Bonito and Monterey	....	2	....	....	....	....
Repetto	Los Angeles	....	....	....	....	....	....
	Totals	47	570	5142	67	8	7,283,434

Summary

	Barrels.
Stocks, September 30, 1911	40,758,837
Production, October, 1911	7,283,434
	48,042,271
Consumption, October, 1911	6,701,693
Stocks, October 31, 1911	41,340,578
Daily average production	234,949
Daily average consumption	216,184
Daily average surplus	18,765

October Exports and Comparative Figures

The exports of all mineral oils during the month of October from the port of San Francisco totaled 10,153,395 gallons, valued at $271,920. This was a considerable falling off from September's record as will be noted by the following comparison:

	Gallons.	Dollars.
September, 1911,	18,670,564	$485,815
October, 1911,	10,153,395	271,920
Excess in amount and values of September's exports	8,517,169	$213,895

The qualities and values of each class of oil exports during October were as follows: 5,134,350 gallons of crude, valued at $87,770; 35,148 gallons of napthas, valued at $6,207; 4,932,458 gallons of illuminants, valued at $167,691; 50,375 gallons of lubricating and paraffine oils, valued at $10,188; 1,064 gallons of residuum, valued at $64. It might be added here that the month of November will doubtless show a large increase over October, as the exports seem lightest and heaviest on alternate months, due to the length of time required by vessels to transport their cargoes to the Orient and other distant markets.

The comparative amounts and values of the exported oils from San Francisco during October, 1910, and October, 1911, are of very considerable interest, displaying a gain for October of this year both in value and amount of oils exported which is most pleasing. The total quantities of all classes of oils exported during October, 1910, amounted to 6,418,808 gallons, valued at $100,068; for the same month of the present year, 10,153,395 gallons, valued at $271,920. Thus the export of October of the present year outstripped last October in quantity by 3,734,587 gallons, or more than 50 per cent. But the gain in value, amounting to $171,852, was 150 per cent greater. As Baku's output and exports diminish, the markets which they fail to supply, together with the new markets which American enterprise creates, are occupied by California products.

November Dividends

During November dividends aggregating $547,269.09, from California oil companies were paid. This totals some $35,500 less than those for the previous month. United Oil passed its dividend. The list of companies paying, as compiled by the Oil World —(no official data is given out by either the San Francisco or Los Angeles exchanges excepting quarterly by the San Francisco exchange)—is as follows:

Amalgamated	$1.00	$ 50,000.00
Caribou	.025	20,175.75
Claremont	.015	7,500.00
Central	.015	15,754.62
Columbia	.01	9,992.26
Home	.015	15,000.00
Homestake	.10	1,000.00
Mascot	.01	5,000.00
Monte Cristo	.05	25,000.00
Mount Diablo	.02	10,000.00
New Pennsylvania	.005	2,500.00
Paraffin	.01	3,000.00
Producers Guaranteed	.60	48,000.00
Record	.075	15,000.00
Sauer Dough	.025	2,500.00
Section 25	.25	10,000.00
State Consolidated	.005	5,000.00
Traders	.60	9,000.00
Union	.006	149,775.60
Union Provident	.006	89,620.26
United Petroleum	.006	18,450.60
Western Union	.005	5,000.00
Total Calif. Co's		$547,269.09
Mex. Pet. Ltd., pfd	.00 2-3	80,000.00
Total all companies		$627,269.09

RECENTLY GRANTED PATENTS

Mechanism for elevating torpedoes into mouths of wells, L. H. Broadwater, Findlay, Ohio, assignor to the E. I. de Pont de Nemours Powder Co., Wilmington, Del., 1,004,554.

Casing perforator, E. A. Hardison, Bakersfield, Cal., 1,004,782.

Well drilling appliance, W. E. A. Pipher, Parkers Landing, Pa., 1,005,301.

Cement-lined pipe and fitting, G. W. Priest, Newton, Mass., 1,005,466.

Coupling device, D. E. Engle, Kiefer, Okla., assignor to A. Leschen & Sons Rope Co., St. Louis, Mo., 1,005,699.

Fishing tool, J. T. Starr and B. M. McFarland, Nowata, Okla., 1,006,020.

Pipe or tubing wrench, J. J. Tague, Bellton, W. Va., 1,006,024.

Well drill, S. D. Wham, Elgin, Okla., 1,006,160.

Underreamer, J. M. Delmore, Piru, Cal., 1,006,446.

Spudding device for well boring machines, G. P. Riggs, St. Marys, W. Va., 1,006,794.

Rod catcher, J. H. Belser. Kane, Pa., 1,006,900.

Underreamer, Edward North, Los Angeles, Cal., 1,007,134.

Well pump, C. O. Sprague and F. E. Sprague, Bakersfield, Cal., 1,007,152.

Calf wheel reel, Titus Andrew Beecher, Coalinga, Cal., 1,007,417.

Combined bull-wheel, tug-wheel, and mounting-reel therefor, T. A. Beecher, Coalinga, Cal., 1,007,418.

Apparatus for sinking wells, G. R. Moore, Chicago, Ill., 1,007,723.

Means for transporting oil in pipe lines, E. N. Mills, Oakland, Cal., 1,007,788.

Pipe tapping and plugging device, D. A. Markley, Tripp, S. D., 1,007,882.

Pipe coupling, J. P. Strickler, Columbus, Ohio, 1,007,989.

Recent Incorporations

The following oil companies have been incorporated recently:

Amalie Oil Company, Fillmore; incorporated October 28, 1911; capital, $500,000; directors, A. D. Turbett, P. Carr, Oxnard; R. C. Sudden, Elvira A. Wagner, Ventura.

Eureka Oil and Development Company, Bakersfield; incorporated October 22, 1911; capital, $75,000; directors, J. E. Wright, S. H. Abram, Chas. York, L. N. Comstock, Fresno and W. Reede, U. S. Waugh, E. T. Burmeister, Bakersfield.

Imusdale Oil Company, Paso Robles; incorporated November 9, 1911; capital, $500,000; directors, Hiram Taylor, Paul Pfister, F. C. Meinecke, W. C. Henderson, all of Paso Robles, and Henry Twissel mann, San Miguel.

Lost Hills Hanford Oil Company, Hanford; incorporated November 9, 1911; capital, $100,000; directors, L. S. Chittenden, Jos. Mills, Thos. Downing, W. J. Wilson, J. W. Bainum, all of Hanford.

Red Man Petroleum Company, San Francisco; incorporated October 27, 1911; capital, $300,000; directors, A. A. Cohn, W. I. Sterrett, Wm. Kellner, San Francisco; A. C. Kingsbury, Los Angeles; S. C. Segal, Oakland.

Spreckels Oil Company, San Francisco; incorporated October 31, 1911; capital, $200,000; directors, W. D. K. Gibson, G. B. Waterman, San Francisco; Samuel M. Shortridge, Menlo Park.

Successus Oil Company, Bakersfield; incorporated October 6, 1911; capital, $150,000; directors, L. V. Olcese, T. H. Miner, Gus Schamblin, James Curran and F. E. Manuel, all of Bakersfield.

The Little Standard Oil Company, Oakland; incorporated November 21, 1911; capital, $25,000; directors, Frank H. Ayers, E. M. Wallace, Harold Jewett, Oakland; Ira A. Miller, Otis W. Engs, Piedmont.

Vulcan Oil Company, San Francisco, Cal.; incorporated November 20th; capital, $250,000; directors, W. S. Downing, Jas. H. Cameron, W. C. Webb, all of San Francisco, Calif.

Secondary Distillation in Nature

The Origin of Petroleum Oil and Natural Gas

By A. S. COOPER, E. M., Ex-State Mineralogist of California; Contributing Scientific Editor of the California Derrick

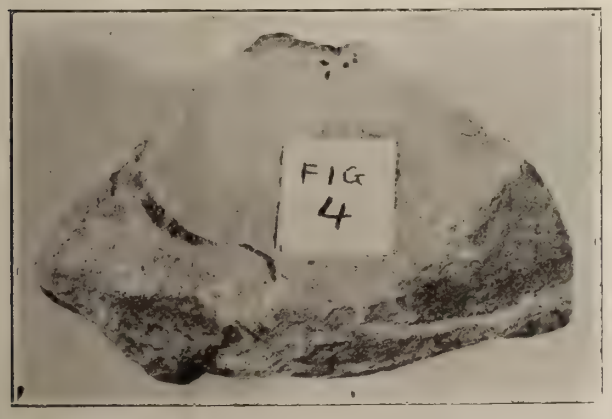
Diatoms are a low order of microscopic vegetable organisms originating and living in fresh and salt water and having a siliceous frame-work which, notwithstanding their excessive minuteness, help to form deposits of considerable extent throughout the Coast Ranges of California. Diatoms form deposits in all parts of the world, but in few of these is petroleum oil found. The absence of petroleum from a great majority of diatomaceous deposits would imply that they are not a source of petroleum oil.

Diatoms have an outer skeleton or frustule, resembling a box, which is always in two parts, either one slipping over the other like a pill box, or with edges opposed. The diatoms are exceedingly minute. In some deposits it has been estimated that there are forty million diatoms to a cubic inch. Hundreds or them would be required to fill the eye of a needle. The thickness of a diatom is, roughly, the sixth part of a human hair, and its weight is estimated at the 175-millionth part of a grain. Diatoms are sub-capillary; a film of oil held by molecular attraction to one side of a diatom shield would extend to and touch the other side.

Diatom Theory of Origin of Petroleum a Mistaken One

It is claimed by some persons that petroleum oil originates from diatoms or other minute vegetable remains found in underlying shales, and that the oil finds its way into sandy layers lying above the shales, mainly through a multitude of joints and cracks, which penetrate theshales. This appears a very mistaken theory. A formation consisting entirely of fresh diatoms, treated in any manner, would not yield sufficient oil to stain the inside of their shells. The amount of hydrogen and carbon which they contain is not even sufficient to produce that quantity of oil. Seaweeds are not particularly rich in hydrogen and carbon; much less so than other vegetable matter. Diatoms have never been found undergoing transformation to either petroleum oil or coal.

The amount of oil (if any) derived from a diatom, would only stain the interior of its shield. There would be a molecular attraction between the oil and the inner walls of the frustule



—this attraction being so strong that a stain of oil may be considered as fixed. Part of this stain might be removed by heat; water currents would be ineffectual to accomplish its removal.

When individual frustules are completely filled with petroleum oil it is certain that part of the petroleum has come from an extraneous source, as it would be impossible for any diatom to furnish sufficient oil to fill its shell. Diatom frustules are practically nothing more than exceedingly small closed sub-capillary tubes and plates. If a diatom, by some unknown and wonderful operation of nature, were to be converted into petroleum oil and if there were sufficient oil to coat the inner frustule, capillary repulsion and attraction would keep water from entering and replacing the oil even if the water was under a great pressure. Therefore, if diatoms were a source of oil there would be no way for the oil to get out of the frustules except through vaporization by heat.

When shales are saturated with quarry or other water it is difficult for oil to eject the water and enter theshale. The reverse is also true; for when oil has taken possession of the shale, water can hardly beforced into it. This is undoubtedly owing to capillary and molecular attraction of the fluids in the shales. When a capillary tube is greased, it repels the entrance of water and when a capillary tube is moistened it repels the entrance of oil. Also, when a capillary tube is greased, it attracts oil; when moistened with water it attracts water. Other close-grained rocks act in a similar fashion to shales. The finer the grain of the rocks, thegreater the attraction and repulsion, and the greater the difficulty for either oil or water to replace the other in the rock.

Explanation of Figure No. 4

Figure No. 4 is a piece of soluble silica shale. The hackly or granular appearance of this specimen is not owing to the fustules of diatoms, but to cleavage. The clouded appearance is produced by impregnations of bitumen which entered the shale in a vaporous state.

The upward pressure of oil, caused by its bouyancy in water, is not sufficient to eject water from a close-grained rock and take possession of same. The upward pressure of a vapor or gas, caused by the bouyancy of either in water, might enter a close-grained rock filled with water, and if the gas or vapor was underlain by oil, the oil would follow the gas into the rock as the gas ascended or escaped.

There are two conditions under which oil may enter a rock composed of sub-capillary tubes (tubes smaller than capillary) which are saturated with water. These are: First, when the oil is in a vaporous condition and under great pressure; in this case the vapors would have a much greater penetrating power than when the oil was in the form of a liquid, since in this condition it does not adhere to the walls of the openings. Second, when a gas or vapor passes through sub-capillary openings, the oil will follow the gas or vapor; the gas or vapor forcing, and making a way for, the succeeding fluid to follow.

Petroleum oil originating in or entering a close-grained rock, is nearly always forever prevented from entering a well, being held in the rock by molecular and capillary attraction. Oil cannot be removed from a diatom except in a vaporous condition; and if enclosed by water can only be vaporized by heat and not by evaporation. Diatoms, therefore, can give no available supply of petroleum oil to the world except through distillation.

It has been estimated that what is called the Monterey shales, consisting principally of soluble silica containing diatoms, in Santa Barbara County, California, are five thousand feet thick. Drilled wells show that the upper two thousand feet of this thickness does not contain any large amount of petroleum oil; below two thousand feet oil is obtained in commercial quantities. Therefore, if petroleum oil originated in these shales, it must have been principally in the lower three

thousand feet. If diatoms are the source of oil, it has not been explained why the lower three thousand feet are so productive and the upper two thousand feet so poor when there are as many diatoms in the upper as in the lower parts.

When the adjoining shales are bituminized the diatom frustules contain bitumen; when the shales are not bituminized, the frustules are not.

Shales in Which Secondary Distillation Has Taken Place

After seeing and examining these shales it cannot be doubted that secondary distillation of petroleum oil has taken place in them. How many more times this oil has been distilled and condensed as metamorphism approached the surface and dykes of igneous rocks were intruded, it is hard to say.

Figure No. 5

Figure No. 5 shows a cross section through a fissured anticline. Hot alkaline solution and bitumens rising through the fissures from hot igneous rocks have bituminized and silicified part of the shales, and have changed the insoluble silica of ordinary shales to soluble silica.

Bitumo-silicified shales are exposed on the surface, in the walls of canyons that have been eroded into them, and the bluffs of the ocean shore, in Santa Barbara County, California, demonstrating that they cover an area of one hundred thousand acres. On the San Antonio and Nacimiento Rivers, in Monterey County, large bodies of these shales are exposed. They are also found in many other places throughout the Coast Ranges. In nearly all of these deposits soluble silica shales overlie them.

The bitumo-silicified shales contain about 2 per cent of bitumen. An area of one hundred thousand acres five hundred feet thick would contain about ten million barrels of bitumen. This figures probably represent about one-fifth the amount of petroleum originally present in these shales.

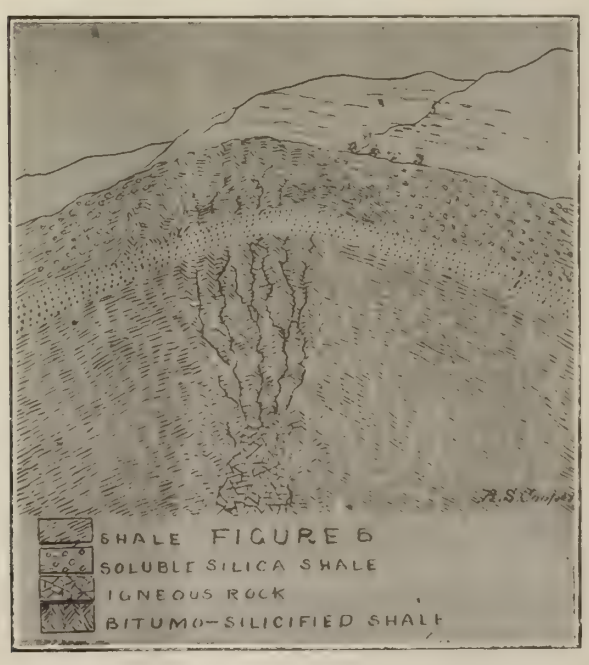


FIGURE 6

Many hundreds of square miles in the Coast Ranges of California show soluble silica shales; the insoluble silica in ordinary shales being converted or partly converted to soluble silica. In many places these shales are bituminized; nearly all of this bitumen consists of light and dark brown friable asphaltum, the residue of petroleum oil after the distillation of its volatile parts. This distillation must have been effected by hot solutions. The interspaces of these shales are rarely ever completely filled with bitumen. The frustules of diatoms are numerous in some places and in others absent. As soluble silica shales are found in nearly all cases to be overlying the bitumo-silicified shales, it is fair to assume that bitumo-silicified shales will, over a large area, be found beneath the soluble silica shales.

Mr. Henry Livingston, a well-known oil man of Los Angeles, has just taken a trip through the West Side oil fields and expressed himself in an agreeably optimistic manner upon his return to the editor of the Derrick. Briefly he stated that he thinks the price of oil will rise in the not distant future; in which we agree. He pointed out the fact that in the West Side fields the rate of decline in production is pronounced and the percentage of increase in consumption seems to be growing; that operators are moving their oil considerably faster than a few months back, and that all that seems to keep up the production is the steady development work, except on withdrawn Government land, a decision upon the legality of the withdrawal of certain parcels of which (coming under the Sept. 27, 1909, withdrawal) is eagerly awaited before operators continue. Mr. Livingston further stated (to quote him exactly) that: "Those who are operating upon withdrawn lands and who were not actually drilling at the time of the withdrawal seem to realize that they have no semblance of a legal possession to the land and are giving it up, or else are not spending any money in drilling scame. Where there is the least doubt as to the locators having proper possession of withdrawn lands **the big transportation companies require a bond before buying or handling the oil produced thereon.** The government is lenient and generally adopts the policy of locking the stable after the horse has gotten out, yet oil operators are prone to respect the withdrawal and, unless they were actually drilling or producing at the time of the withdrawal, will not try to hold same upon the mere fact that they had the land located at the time of the withdrawal.

"The Bellridge and Lost Hills Districts are being developed fast, the Bellridge Oil Company running five strings of tools and the Universal Oil Company, in the Lost Hills, running ten strings. The Bellridge gusher, along the east line of Section 33, 28-21, is said to be doing 2000 barrels per day from a depth of only 700 feet. It is Well No. 9, and is located about 500 feet southeast of the discovery well."

Mr. Livingston's information and opinions are well worth considering.

Santa Maria Oilfields, Ltd.

The Santa Maria Oil Fields, Ltd., is completing the last stretch of broad gauge track to its property in the Cat Canyon field. The constructive work on the company's refinery is to begin immediately following the completion of the railroad track so that shipment of materials and machinry can be made over its own line. The company is making an extensive campaign to bring in several wells at the time its refinery is planned to be in operation.

Palmer Oil Company

The Palmer Stendel well has been started again after waiting for the cement job at 1300 feet. This well is just south of the Cat Canyon Oil Company's property, and is its nearest neighbor. The 8-inch casing will be used from this depth.

Dispatch Oil Company

The Dispatch Oil Company, a near neighbor to the Ideal, finished its first well at 3280 feet in the sand that was encountered in the Ideal. The well will be put on the beam in a few days.

New Pennsylvania Pet. Company

The New Pennsylvania Pet. Co., on the Fulger tract in the Cat Canyon field, is getting a substantial production after having put the well on the pump at 3000 feet. The oil is being used for fuel purposes and as soon as the hole is purged of the sands it should open up in good shape. The prsent production is being held in abeyance until the well is put in thoroughly good shape, and this usually takes some time in the Cat Canyon field. The rig for No. 7 in the old field has been erected and drilling will begin within a short time. This well is located in the vicinity of several big light oil producers, among which is New Pennsylvania No. 6, and will augment the production from the old field property.

United States Government Will Seek to Recover 440,000 Acres of Oil Lands from Southern Pacific Company.

Enormous Wealth May Be Wrested from Southern Pacific by Prosecutor of Oregon-California Railroad Land Grant Cases, in Suit to be Started in Los Angeles Courts

Story of the Famous Land Grants and Why the Suit Is of Such Overshadowing Importance to the Public

This Article Has Been Prepared Expressly for the California Derrick by Guy H. Salisbury, of Coalinga, California

There will soon be filed in a circuit court in Los Angeles one of the most important land cases, to the people of California, that has ever come before a California court of law for adjudication. It will probebly be known as the case of the United States vs. Southern Pacific Company, and the reason it is to be filed, together with a summary of a brief nature of the main contention in the case, is herewith set forth.

Why the Railroad Received the Grants

When this State was new, and the great Civil War was absorbing the time, money and men of the country in a Titanic struggle, the necessity of a transcontinental railroad evidenced itself; and it was in those serious days of the life of this nation that the scheme was launched which eventually built the Central Pacific and the Southern Pacific railway companies.

The necessity of the time warranted liberal terms on the part of the Government to the builders of the railroad. The venture was hazardous, the need compelling; and to induce men to take the venture bills were introduced in Congress creating our railroad grants.

The Clause Excepting Mineral Lands from the Grants

Even in those days, however, there were men in the Senate who objected to the "giving away of the public domain." Senator Cornelius C. Cole, now a resident of Los Angeles County, made a hard, winning fight for the people when he effected a compromise in the bill that created the "Granting Act of Congress;" and an amendment to the bill was inserted "excepting and excluding all mineral lands therefrom (that is, from the grants), except coal and iron."

The Government was not in a position to classify all the lands in the vast grant and the railroads demanded the patent issue to secure their foreign bonds; this was done, with the full understanding of the above "exception and exclusion" that was carried into the patent issued. Our Supreme Court, sitting **en banc**, last July, rendered a decision in the case of Rooney vs. Van Ness, in which the decision handed down was in favor of the miner and against the railroad which was party to the contention; for the court ruled that the "exception and exclusion in the grant must first be considered before it may be determined what the grant did convey."

Location of the Oil Lands Held Under the Grants

Some 440,000 acres of lands that have been proven oil lands, and a large portion of which are in Fresno and Kern Counties, are included within these grants. The Southern Pacific Company have developed a very large area of this territory under the operating title of the Kern Trading and Oil Company, and it may be added here that the lease from the Southern Pacific Company to the Kern Trading and Oil Company has not been put on record.

How the Railroads's Title Came to be Questioned

The question of ownership of this acreage was first raised by the clause in the deeds from the Southern Pacific Company to purchasers of railroad lands in the odd numbered sections within the grant, wherein the railroad company inserted the clause, "excepting and excluding mineral lands reserved by the government." As these lands became more valuable the deeds were examined by some of the foremost attorneys of this State, who pronounced the title, in their opinion, vested in the United States.

Francis J. Heny, of San Francisco, was among the first to pay close attention to the granting act that governed the patent to these lands, his opinion being that the Government should, and would, assert ownership under the same granting act of Congress.

In some quarters, friendly to the railroad interests, the cry is raised that the statute of limitations shuts out the Government due to an act passed by Congress with the view of protecting this vast area for the railroad company. It will be shown during the trial of the case shortly to be filed that this "mineral land" did not pass to the Southern Pacific Company under the granting act; and consequently, that there was no application to this case in the "limiting act" referred to.

Suit Not Intended to Harm Prosperity of Oil Industry

B. D. Townsend, special assistant to Attorney-General Wickersham, has full charge of the case which the Government has been preparing for several months; the complaint has been prepared with Mr. Townsend's usual thoroughness and the bill will be filed sometime in December; and as the Government—representing the people—have the right of way, there will be no needless delays in the hearing of the case.

In a statement made by Mr. Townsend, to the Associated Press, he said: "I want the people of California, and particularly those who are interested in the oil industry, to feel assured that no litigation is to be started which will upset the commercial prosperity of any section of California and do more harm than good.

"The fight in which the Government is about to engage will be directed against a situation which is not only unlawful but which is essentially in opposition to the complete and proper commercial development of the oil land riches. As to the land subsidies granted by the Government to the Southern Pacific, and on which lands oil is being produced or is known to exist, the equities are all with the United States, and I firmly believe that we will be able fully to establish this in the courts.

"In the Oregon-California railroad land grant cases, in which the Government has so far successfully litigated the title to 2,300,000 acres of land, a policy was pursued of only enjoining as defendants those who held 1000 acres or more.

"Conditions are somewhat different in the oil land situation and it would not be proper for me to give at this time the specific policy which will be followed to protect the people and the community generally from undue disturbance. It is not necessary to do so.

"What I do want to express is that the Department of Justice and the other departments dealing with the case are fully alive to the effect which might follow ill-considered litigation and this to some extent explains the delay in filing the actions.

"Time has been taken to complete a remarkable investigation of the whole situation. When we go ahead the Government will have in mind not only the legal rights of the United States, but also the commercial prosperity of California.

Mr. Townsend, with his corps of assistants, spent three weeks in Washington, D. C., massing the immense amount of data that has been collected for this litigation. Every small detail has been measured as to its value in this suit.

Mr. Townsend has been connected with the Department of Justice for about sixteen years, handling land suits in various parts of the United States. Of this time about four years was spent in connection with land suits in Oregon and Washington, which includes the litigation in the Oregon-California land grant cases involving property estimated at $100,000,000. The Government won the first step of this case, the decision of which was handed down by Judge Charles E. Wolverton, acknowledged to be one of the ablest jurists on the Circuit bench of any State. It is generally conceded that the lands involved will be finally restored to the public domain.

That part of the present suit that interests the oil men of the Coalinga field, and which will be watched with interest, is the case of George D. Roberts, et al. vs. The Southern Pacific Company, Kern Trading and Oil Company, et al. The lands directly involved are being operated by the United Development Company in the Coalinga field.

The final settlement of this case will put to rest the doubt raised in the mind of many purchasers of railroad land included in the grant by the railroad themselves, in the clause inserted, that gave due notice to the purchaser that the railroad company would not undertake to convey "mineral lands," acknowledging by instrument of deed that the same was reserved to the Government.

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Correcting an Error

The California Derrick is this month advancing the volume number of this month's book, due to that fact that the June, 1911, number should have been **Vol. 4, No. 1**, as we found out recently when the California State Library called our attention to the fact that both the April and May numbers of this year were marked Vol. 3, No. 11. We are very pleased to correct this error as it would otherwise appear from the volume numbering that fewer copies had been issued than should have been. Thus this present number of the Derrick is **Vol. 4, No. 6**; not Vol. 4, No. 5, as would otherwise have appeared.

Consumption, Production and Price

As shown on our statistical page, the consumption of oil is expanding rapidly until this month it comes within 19,000 barrels per day of reaching production. Hence, if the producers will only **realize** that all they have to do is to allow the **marketers** to expand their market for them, and not go to work directly they perceive that there is a chance of consumption and production equalizing each other, so that prices at the well will have a chance to stiffen; why, then, we say, if they do not get busy and rush matters all at once now that the desired end appears possible of accomplishment, the price **will** rise all around; and that will pay the bills first, then dividends for the companies which have thus far had nothing but bills to pay. There's no use over-producing a product the intrinsic value of which is at least $1.50 per barrel—and probably a whole lot more than that. If the oil men show the marketers more oil above ground than the marketers have an immediate use for, the marketers will give them less than they would were there an immediate need; and the more oil there is, the less the price the marketers will be willing to pay.

An Appreciation

Guy H. Salisbury, better known to his friends as "Major" Salisbury, and known wherever California oil is known, is in this number of the Derrick contributing an editorial on the "Leasing System" as he sees it; a review of the Southern Pacific land case and his regular matter on events in Coalinga.

We wish to say right now that there is no one better qualified nor with more right to express an opinion on the affiairs of California's oil business than is our friend Mr. Salisbury. "Guy," as the oil operators call him, is one of the most public spirited oil men in the business of producing oil today. Further, his breadth of outlook is equalled by few and as a consequence what he writes in this issue is well worth the consideration of **anybody** interested in the oil business. When Mr. Salisbury states that bureaucratic control of the oil fields is not desirable he has good reasons for his opinion. They can be found in his editorial, which appears in another column. Chiefly they consist, probably, in the fact that the prospector ought not to be hampered; which is the unadulterated truth. The man with the courage, the stamina, the persistence and fearlessness to get out in the desert, away from all civilization and against whatsoever odds, who, to develop his own wealth develops the wealth of the nation, ought not to be restricted and hampered by some bureaucratic clerk in Washington who doesn't know an oil well from any other hole in the ground, who knows nothing about the tremendous efforts necessary to prove a new oil district, who knows nothing of the hazardousness and the extraordinary average courage of the prospector who makes good. A bureau clerk can't know these things without experiencing them; and no man who experiences them, we dare say, ever becomes a bureau clerk.

Not being one of those who believe in the time honored custom of throwing a wreath of flowers on the bier of some dead friend accompanying it with a splendid panegyric of the virtues of the deceased, who cannot know a thing about it and to whom no satisfaction is rendered thereby, we take this occasion of expressing to the living Guy H. Salisbury—(and he is by all means LIVING—the livest man in Coalinga, in our opinion)—our appreciation of his splendid efforts to aid in developing the oil industry of California, by every means in his power, including burning the midnight electricity to report the operations in his field for this and other publications. Guy H. Salisbury is a real MAN. He is a pioneer in the full sense of the word, and a prospector, too, and we know that in expressing this sentiment we join hands with everybody who knows him, wishing him every success and a long life of activity and consequent happiness. "Here's to you, Major!"

Christmas Wishes

Wherever there are Christian customs Christmas is felt in every department of commerce. It is fitting, therefore, that we take this occasion to bespeak to our subscribers, our advertizers, and those interested in the great oil business in general, our wishes to all of a prosperous Christmas and a brighter New Year.

To those who have invested in oil for the first time, and have seen their shares decline in market value because of the slump, we wish a gain in value and early dividends.

To those who are already enjoying divindends monthly we wish more dividends, and kindliness on their part towards those not so fortunately situated.

For the oil operator we wish a steady increase in market outlet at an advanced price over the present one. This wish we feel sure is to be realized in the early future.

To the supply houses we wish a big sale of supplies to **outsiders**—(we don't want to see another rush to drill up the county here in the immediate future)—so that business may gain, not at the expense of the general producer.

Finally, we hope the war on refined ceases and prices go up for the refiners.

But:—If we express any more of these too pleasing desires we fear for our safety. So here's an end to it. Prosperity to **all**!

The census report of the petroleum refining industry for 1909, compared with 1904, a half decade previous, shows a gain of more than $45,000,000 capital invested in the business; an increase in the value of the products totaling $61,993,000; an increase in value of crude of $2,107,000; and a drop of 4 per cent in the general profits of the business, in proportion to that of the previous census year. There was a general increase in the products refined in proportion to the increase of the oils, but on account of the change in character of the latter the relative quantities of the various grades were not increased proportionately, some advancing greatly at the expense of others.

A bill to tax all oil lands, whether producing or non-producing, but for heavier if the former, has been introduced in the Congress of Mexico for passage. It is stated that the tax would certainly put half of the companies now operating there out of business if it were to be passed.

THE LEASING SYSTEM AND THE PROSPECTOR

An Editorial by Guy H. Salisbury

It appears more than likely that a bill providing for a "Leasing System" will be presented at the coming session of Congress, to be applied to all Government mineral lands, including oil lands.

The strongest advocates of this measure are not from the mineral bearing States, but are from the Eastern and the old Middle States, whose lands have passed into private ownership years ago. Yet they would indicate a policy of "leasing public lands" that cannot in the remotest sense affect their states, or their constituents.

This measure will be forced to the front shortly after the holidays; of this there is little doubt. The only justification that the "non-producing mineral" members have, is that they can control the greatest number of votes; hence it is not a matter of justice but a matter of Congressional strength which will determine this very important matter. There will be about 400 members in Congress and but twenty members from the West who will stand pat against the unjust proposition of forcing the great Western States into an Eastern policy that will deter development of our resources.

Congressman Needham, in a recent talk, delivered before a number of oil men in Coalinga, touched the popular cord on the leasing problem that is sure to have the attention of Congress at the coming session, when he stated that if we must adopt a leasing system let it be first an experimental plan; let us try the system upon Alaska first, as there are fewer people to be affected there and a very large territory in which to operate. Alaska is yet a territory, while the Western States to be affected are presumed to be directly under control of the people of those states, true, the lands to be affected are government lands, but the prosperity of the several States depends very largely upon the development of the natural resources within each of them, and as you hamper development so you hold back the prosperity of the State. When the postal banks were first under discussion the radical members would have thrown that system upon the public as first considered; wiser council prevailed and the experiment was tried in a few cities throughout the country with the result that changes were found necessary, which have been applied.

Mr. Needham, in his remarks, said: "Should our Eastern friends insist upon applying a leasing system to oil lands let it be experimental, let it be tried upon certain withdrawn lands." We would suggest those lands within the withdrawal of July 3, 1911. It appears but just that there should be an opportunity to test the merits of some system before it should be applied to all mineral lands. The great system of National Irrigation is not a full success as applied; the undertaking was launched in too great a hurry, and today that great system is at a standstill, as far as the contemplated plan was supposed to work out.

The most important measure that could have the attention of Congress, would be an amendment of the present Placer Mining Laws, to make the laws apply to oil mining. The prospector, the man who goes out into new territory and works in good faith to discover oil, should be protected by the Government; he should be allowed unlimited time to complete his discovery, as long as he works in good faith. He should have a liberal reward for his efforts. There should also be an amendment to the mining laws, limiting the acreage that any one man, or a company, or an association of men, or a corporation could locate and hold. The payment of a fee, similar to the one paid by a homesteader, when he files on his land, should protect the locator who works upon the land in good faith; that work directed to making a discovery of oil.

The leasing system, as outlined by some of the Eastern members of Congress, would work against the small man and would place all government oil lands in the hands of large corporations. That a man must secure the consent of some man in Washington before he can transfer a lease is an injustice, and would cut the small man out entirely, but the man with capital would have his torney in Washington attending to this for him,—a man trained in the lines that reach the head, or clerk of that department,—while the pioneer, the man who makes these great opportunities possible by reason of discovery, would fail absolutely for the lack of funds to defray expenses to Washington, with the usual wait of many days before an "audience" could be had with the "Clerk of Department of Leased Lands." Reader, have you ever had a case in Washington, where your claim was before some department head, or clerk? If not, you cannot understand the tedious delays. How much business would be done in this State if every real estate deal had to be approved at Washington? The coming session of Congress will have before it legislation that will be of vital interest to every oil man; it means death to the oil industry if the extremists gain the saddle.

The Internal Combustion Engine

The internal combustion engine of Diesel type is here to **stay.** The "Toiler" has demonstrated its efficiency, its wonderful economy and its practibility by a trip across the Atlantic, and by regular trips on the great lakes. But not only is this the case; an English firm is now preparing to equip a ship of 14,000 tons displacement with Diesel oil engines; the largest in the world. This information comes direct from the chairman of Lloyd's Register Committee, and cannot be doubted. The action of the Diesel engine is in brief as follows: The Diesel is an explosive type engine. Instead of naptha, distillate or gasoline, **crude oil** is used. Into an explosive chamber in which the air is compressed, say to a density of 500 lbs. per square inch, the crude oil used is injected at a pressure of 750 lbs. per square inch. The result of this tremendous compression is an immediate ignition of the oil with a combustion so utterly complete that absolutely nothing remains in the explosive chamber, even after several weeks' continuous work. A very great saving is apparent. No stokers are required, thus doing away with feed, with stokers, and with space for stokers. No boilers are required. No smokestacks are used. There is no unnecessary heat and consequently no necessity for introducing air drafts to the stoke hole. The oil can be stored in special compartments prepared for it or in the false bottom of theship. In fact, unless a whole article were to be written we could not hope to detail the advantages of this new engine as a source of power, both stationery and for locomotion; but we hope to present the advantages of a late type of American engine of Diesel idea in an early issue; one that has the Diesel itself at a disadvantage. There are now more than 250 vessels, large and small, mostly the latter, equipped with Diesel, crude oil consuming engines; and larger and larger are the plans being drawn for their use.

Different Than Expected

We had expected that the article which Mr. Prutzman contributes in this number was to treat of the manufacture of asphalt. It does not, however; it treats of the Pinal-Dome Refining Company's plant at Betteravia, and makes just as good reading, if not better, than the asphalt refining article we had expected.

Standard Oil of California Elects Officers

On December 5th the Standard Oil Company of California elected the following officers: D. G. Schofield, president; W. S. Rheem, vice-president; Wm. Edwards, secretary; W. S. Miller, treasurer. It is anticipated that the Standard Oil Company of California will from now on go after business with vigor, unhampered by restraints, it being free to compete to the uttermost. It is hoped that the competition will not be so terriffic that the persons who have gloried in the restoration of competition among the Standard subsidiaries and incidentally among all other companies, will have very serious regrets. But that such a thing is possible, saving only through the extraordinary wisdom or greatness of the presiding officers of the company in this State, owing to the fact that the company has such a tremendous money backing and can get as much as it needs, is conceded among those who really know whereof they speak.

The Zierath Combination Drill Company's operations with their combination drill, on the Midway Southern well at Pentland Junction (Section 8, 11-23, Maricopa), have met with much success. A good well was brought in, the management states, at a depth of approximately 2400 feet, and was kept under perfect control. A description of the Zierath appeared in the Derrick last spring.

A Labor of Wisdom

The United States Geological Survey is doing an exceedingly wise work in indicating where oil may be found so that drilling companies may try for it in likely places rather than in places where there is no possibility of getting oil other than in the mind of some persons who hope there may be some there.

The Navy and the Use of Fuel Oil

By the time the worthy naval experts who direct the affairs of the United States navy from their Washington pigeon holes have awakened entirely to the value of the use of crude oil as fuel in battleships, the European's will be building battleships securing their power by the Diesel engine; thus we will be always just that much behind those who are forced by economy to take advantage of every opportunity; whilst our tremendous resources allow a wastage unparalled; or, is it the coal barons who force the waste? For oil, you know, displaces thecoal that the coal barons sell the government. Still, there is hope; see what Dr. Day states, on the page we have devoted to the United States Geological Survey.

California's Gas Resources

We are confident that California has, in the Buena Vista Hills gas district, the greatest gas belt in the world. In fact, there is no question about it. The wells produce as high as fifty million cubic feet of gas per day, singly. The Standard Oil Company gas wells are capable, if we are not entirely mistaken, of supplying entire New York, were they so located. How little is known of California's gas resources is only to be guessed at by the recent law which Lewis R. Glavis had passed through the last legislature of California, which provided a penalty for allowing gas to waste; A penalty for allowing Buena Vista Hills gas wells to exhaust! Mr. Glavis evidently knows nothing about the Buena Vista Hills gas belt. It has no parallel anywhere. All that can be done to save the gas is a matter of proceeding cautiously, preparing in every possible way to cap the well off and keep fire away so that no explosions will result. The extent of the Buena Vista Hills gas belt is not known; but what is known is that the pressure is terrific in every well in the region of the Standard's gassers, and the Honolulu's wells, and that it extends for a considerable area there is no question. Now that the United States Geological Survey is devoting so much of its time to California it would be a good thing if Dr. Day, himself, could make a thorough investigation of the Buena Vista Hills gas district so that no more gas may be wasted than is necessary, through unwise drilling. We have, in California, the three most wonderful power sources known to the world: Tremendous hydro-electric power; greatest known oil fields; greatest gas belt! It were better not to waste these marvelous resources; future generations may be impoverished to a degree not now to be guessed at, and where a nation is wildly disregardful of its own interests and prodigal of its riches, its decline is but a matter of time.

Alaska Oil No Dream

We can remember that when we published the articles of our correspondent on Alaskan oil, from the Katalla oil field, a certain Los Angeles publication sniffed at the story—(which also appeared in the "Mining and Scientific Press")—and advised the world that it was a "frame-up" to get the money of the unsuspecting. That was a dirty, disreputable piece of work. Alaska has an oil field, and a valuable one, in Katalla. Not only that, but the oil of Katalla is being refined, producing kerosine and gasoline at the site of the production, and supplying a growing local trade. That makes the sneerer look sick, doesn't it?

General Notes from Various Fields

Mr. Wilson R. Blain, of Albany, Linn County, Oregon, is convinced that there is oil in that district and is doing his utmost to interest the people there sufficiently to have them explore the region. Mr. Blain writes us that there are many evidences of petroleum to be found in the springs and foothill streams that abound throughout the district. Mr. Blain is a geologist and an ardent one. It is a fact worth noting that in every community there are to be found some few persons who are alive above the shoulders, as well as below, and it is to these, mainly, to whom the development of the various resources of the various regions of the world is due. Mr. Blain is such a man. He has been writing articles in the Albany "Evening Herald" to awaken the interest of those among his neighbors who are alive to possibilities. Mr. Blain is a confirmed reader of the Derrick. Our best wishes are with him.

It is now the general opinion of geologists and the better versed practical operators that the Bellridge District, of which so much has been heard lately, is a continuation of the Elk Hills anticline. Whether this is so or not remains to be demonstrated. Bellridge has been most satisfactorily proven Elk Hills in the main, unsatisfactory. The reason for the theory advanced is that after drilling between 2000 and 3000 feet in Elk Hills the same formation is encountered as is obtained to start with in Bellridge. The slant of the formation is at an angle which lends probability to the theory. But the drill only confirms.

The California Consolidated Oil Company has acquired another 1000 acre lease of excellent prospective oil territory on tidewater in Mexico from the holdings of Col. T. Spellacy and J. D. Thompson. Exact location not stated. This makes 2000 acres under lease in the Southern Republic. Drilling will probably be begun during the next few months. At least it is so hoped by the company.

Jas. A. Ward, of Fresno, has purchased the property of the Mogul Oil Company, consisting of 800 acres in Sections 7, 8 and 18, T. 20, R. 1 S., Lost Hills. There is one well, uncompleted, on the property.

The Bull's Head Oil Company refinery at Martinez is to be placed in operation in the near future, according to a press dispatch, under the control of the American-Oriental Company, which took over the Bull's Head Oil Company. It is stated (though with what truth we are not able to say) that the company will form a steamship company subsidiary which will operate vessels between the Orient and the Martinez refinery carrying the American-Oriental's products.

The Universal Oil Company is now delivering its Lost Hills product to the Associated through the Los Hills pipe-line of that company at a price stated to be in excess of 50 cents per barrel by one publication. To date some 60,000 barrels has been delivered.

The Esperanza Cons. Oil Company has purchased 90 acres of land in the southeast quarter of Section 5, 22-21, Lost Hills, for $100,000, or very close to $1100 per acre. Esperanza's new well is flowing 200 barrels of 29.6 degrees gravity daily.

NOVEMBER PRODUCTION FIGURES

	Barrels.
Stocks, October 31, 1911	41,340,578
Production, November, 1911	7,210,297
	48,550,875
Consumption, November, 1911	6,301,982
Stocks, November 30, 1911	42,248,893
Daily average production	240,343
Daily average consumption	210,066
Daily average surplus	30,277

Full report and analysis given in next issue.

The Research Work and Publications of the United States Geological Survey

Being the California Derrick's Periodical Review of the Tremendously Valuable Researches Accomplished by the Government in the Aid of the Oil Industry

The United States Leads the World with an Amazing Oil Production And California Leads the United States

Dr. David T. Day, the celebrated head of the petroleum department of the United States Geological Survey, has just had published his advance chapter on petroleum from "Mineral Resources for 1910," his contribution to that valuable publication. This contribution may almost be said to be invaluable, so filled is it with accurate and reliable information of a character to be secured nowhere else. A brief review of this contribution is herewith given; it is, of course, merely skeleton-like, as the advance chapter contains far more meat than could be digested in a small review which is limited by space and other considerations.

Production Increases Phenomenally

To begin with Dr. Day states that the petroleum industry in the United States has experienced a phenomenal increase during the last four years, each year's increase over the year previous being so great as to create a belief that the limit of production has been reached. To quote from the press bulletin of the Survey:

"After varying between 50,000,000 and 60,000,000 barrels annually in the decade between 1890 and 1900, the oil output was over 63,000,000 barrels in 1900 and increased to 88,000,000 barrels in 1902. In 1903 it passed the 100,000,000-barrel mark, in 1904 it was over 170,000,000 barrels, and in 1905 nearly 135,000,000 barrels. After a slight decline in 1906 the output rose again, in 1907 reaching 166,000,000 barrels. It was 178,000,000 barrels in 1908, 183,000,000 barrels in 1909, and 209,556,048 barrels in 1910, a gain of 14 per cent over the record output of 1909. This brought the total output since the beginning of the petroleum industry to more than two billion barrels."

United States Leads the World and California Leads the United States

The United States is the greatest oil producing country in the world, having a greater production than all the remainder of the oil producing countries together, as shown by Dr. Day's statistics. We will now quote directly from the press bulletin, which gives comparative figures showing how the United States out-produces the remainder of the earth. California's lead over all other fields; Dr. Day's opinion in regard to the use of fuel oil; the advance in the use of Diesel type engines; number of producing wells in the United States and, finally, comparative figures as to the standing of other American oilfields:

In 1910 the wells of this country yielded nearly 64 per cent of the total production, Russia scoring a very poor second with about 70,000,000 barrels, or 21 per cent. The production of other countries is comparatively negligible, the third on the list, Galicia, contributing only 3.87 per cent of the total.

The excess of the petroleum production of the United States over the normal demand is shown by the fact that the 209,556,048 barrels produced in 1910 brought a smaller return—$127,896,328—than the 183,170,874 barrels in 1909, which was valued at $128,328,427. The even smaller output in 1908, 178,000,000 barrels, was valued at still more—$129,079,184. As the production has increased the average price has gone down from more than $1 a barrel in 1900 to 61 cents in 1910.

These repeated great increases in oil production have been due to the successive development of four great petroleum fields farther west than the old productive centers. By 1909 the country had adapted itself to the influx of oil from western Ohio and Indiana; then came in rapid succession the development of the Gulf field in Texas and Louisiana, the Mid-Continent field in Oklahoma and Kansas, and the Illinois field. In the meantime California's production had been increasing so rapidly that it became the dominant feature of 1909 and 1910, outstripping the production of any other State and promising to retain this supremacy in the future. The trade effect of these developments was largely discounted by the small proportion of gasolene and kerosene yielded by the Gulf and California oils and it was only when the superior character of the Mid-Continent oil was recognized that the Middle Western contributions began to be taken seriously in the general trade. Geographic and technical factors put California petroleum at a disadvantage compared with the Eastern supply, but the great production has compelled such advances in refining methods as to make it reasonably certain that California will in the future yield good refined products, including lubricating and illuminating oils.

Nearly 150,000 Oil Wells in Operation

There are now 148,440 oil wells in operation in the United States. They average about four barrels a day, but in Pennsylvania and New York old wells in some districts yield a profit on an output of less than one-fifth of a barrel a day. The original Drake well, drilled in 1859, would probably, if it were cleaned, be capable of yielding one-third of a barrel a day. Another well close to the Drake well is forty-five years old and is still being pumped.

Over 8,500,000 acres of land are leased for oil and 700,000 acres are owned in fee by oil operators.

California Largest Producer

California heads the list of producers in 1910, with 73,010,560 barrels of oil, an increase of 17,538,959 barrels over the production in 1909. This output is more than twice as great as that of Pennsylvania for any year, and is greater than that of any foreign country; in fact, the production of petroleum in California and Oklahoma combined is practically equal to the entire foreign production. The average price per barrel of California oil in 1910 was 40 cents, the total value being $35,749,473. The 1909 price was 55.4 cents. The increased use of fuel oil in 1910 over 1909—more than 23 per cent—was due largely to California's energy in pushing thesales to the northwestern railroads.

The second among the oil-producing States in 1910 was Oklahoma, with a production of 52,028,718 barrels, valued at $19,922,660, a healthy increase from 1909 in both production and value.

The third largest producer in 1910 was Illinois, the production being 33,143,632 barrels, valued at $19,669,383, aginst 30,898,339 barrels, valued at $19,788,864, in 1909. Other heavy producers in 1910 were West Virginia, 11,751,871 barrels, valued at $15,720,184; Ohio, 9,916,370 barrels, valued at $10,651,568; Texas, 8,899,266 barrels, valued at $6,605,755; Pennsylvania, 8,794,662 barrels, valued at $11,908,914; and Louisiana, 6,841,395 barrels, valued at $3,574,069.

Louisiana's production has been notable, the increase over that for 1909 having been 123 per cent as a result of the development of the new gusher district in the Caddo field.

A copy of the report on petroleum for 1910 may be obtained on application to the Director of the United States Geological Survey, Washington, D. C.

Splendid Bulletin on Physical and Chemical Properties of the Petroleums of the San Joaquin Valley, Issued by the U. S. Bureau of Mines

We have received an excellent treatise on the Physical and Chemical Properties of the Petroleums of the San Joaquin Valley, Cal., from the pens of Irving C. Allen and W. A. Jacobs, of the United States Bureau of Mines. There is incorporated in the same pamphlet an analysis of natural gas from the petroleum fields of Southern California by G. A. Burrell, so that our State is receiving the attention which it deserves from the Government, and which it has not always received, by any means, until lately. In the introduction to the work the authors say that the Geological Survey, realizing the great importance and wide application of petroleum and its products for fuel, and the absence of authentic and comprehensive information the literature on the commercial valnue of American petroleums, has for a number of years been making analyses and other examinations of these oils and their products. In 1907 a series of investigations was begun to determine the economic values of petroleums and natural gasses in the United States with special reference to supplies in the **public lands**, and also to ascertain how these resources could best be utilized; that is, with least waste and greatest efficiency. This work is **now under way**—(See the last issue of the Derrick, page 6, where tests under direction of Dr. Cottrell are mentioned)—and will be most comprehensive when concluded. Information concerning facilities for handling and storage (at the well), facilities for transportation, kind of crude produced as regards its availability for use as fuel; best process of refining; examination of by-products both as to number and class of material gained; utilization of same; chemical and physical tests of samples of production from various leases and wells; and a host of other matters will receive and are now receiving the attention of the Government experts. We note that acknowledgments are made to a number of well known oil men for their "many courtesies" and among those mentioned are Ralph Arnold, S. A. Guiberson and our well-liked friend Guy H. Salisbury. Concerning the bulletin itself we cannot go deeply into detail, in this issue, but there were an extraordinary number of tests of the oils in the Kern River, Coalinga, McKittrick, Midway and Sunset oil fields; and that these tests were made for the purpose of determining the specific gravity, flash point, burning point, viscosity, calorific value, sulphur, water, napthas, lamp oils, lubricants, and finally the commercial values of the oils tested. A good work.

The Production of Asphalt, Related Bitumens and Bituminous Rock in 1910.

A small booklet with the above title has been issued by the Department of the Interior from the pen of Dr. David T. Day, of which we will herewith give a short resume. This little booklet is termed an advance chapter from Mineral Resources of the United States, Calendar Year, 1910, and starts off with the definition of what is included under the term "asphalt," then gives the production and values of same during the years 1909 and 1910, which show a gain for the latter year in both instances, to-wit: In 1910 the total production of asphalt in the United States was 260,080 tons, valued at $3,080,067—a gain in quantity of 31,425 tons, and of value totaling $941,894. The trade year, says Dr. Day, was remarkable for the impetus given to the building of better roads; and that this was largely the result of experimental work by the various municipal, State and national highway bureaus of the country; further, that this experimentation convinced the investigators that the semi-liquid asphalt is the best road binder, for which reason the demand for the asphalt obtained as a residue from the Texas, California and other oils has been considerably stimulated. There was an increase in liquid asphalt production amounting to approximately 31,000 tons in 1910, and an increase in price of nearly $2.00 per ton. Another feature, and one that will meet with a great deal of interest and praise from those commercially interested in the asphalt industry, is a table showing the total production of all kinds of asphalt in the United States since 1882; also the production of bituminous rock, in short tons; also a table showing the production of asphalt from 1907 to 1910 by varieties in short tons. Another table shows the production of asphalt during the last two years, 1909 and 1910, by varieties and in the different States, likewise in short tons. And, be it noted here, **California leads all comers.** California's asphalts (of all kinds) amounted to 127,115 tons, valued at $926,848 in 1909, and to 143,486 tons, valued at $1,338,736 in 1910. An excellent table is also incorporated in the booklet showing the characteristics of solid bitumens, which will doubtless be found of very great interest by the chemists and others interested in the trade in a general way; principally by the former. The imports and exports of asphalt to and from this country are also given in tables. In addition there is given a table showing the total exports from the Island of Trinidad from 1906 to 1910, inclusive; likewise a valuable list of U. S. Geological Survey publications on asphalt.

(To be Continued)

The News from This Field is Written By
GUY H. SALISBURY—California's Best Known Oil Correspondent

Blair Oil Company

The Blair Oil Company, Section 14, 21-15.—Well No. 2 is 4070 feet deep, with 6¾-inch hole. The casing has all been pulled out, the bad joints and defective collars have been removed, a new shoe put on and the casing replaced and drilling is now in progress cleaning out the formation that caved in while pulling the casing. The man in charge of an oil well must be resourceful if he expects to be successful. On this job thre was a bad joint on the string which parted at about 3000 feet from bottom. To remedy this a "die collar" was made and put on the casing that was free, the casing in the hole was cut off just below the threads on the top joint, the die collar run down and threads were out on the casing in the hole. Then a pull was made, the casing was parted a second time, the same process was gone through until the entire string of casing was pulld out. There was 1000 feet of friction on the pipe to "jar" against. A very clever piece of work. Harry Crooks, driller, was in the derrick. On the string going back into the hole the collars have all been taken off and examined, imperfect collars have been replaced, and the string will be in perfect condition to shut off the water. The last water in this formation wa sencountered at 4027 feet; this will be shut off with the 28-pound, 6⅝-inch casing now being used. The oil sand will be encountered at about 4120 feet, according to the present run of the formation, which is in line with the west side and Jacalitos formation. The water at this depth is largely charged with alkali and magnesia, and this formation overlies the west side sand.

Azores Oil Company

The Azores Oil Company, Section 26, 21-15.—Well No. 1 is 4260 feet deep with heavy 4½-inch casing. The bit has passed into a very rich-appearing light oil sand. With the hole full of water it is hard to determine the gravity or the quantity; this is the best indication that th well has shown, and having passed through the Santa Margarita and the Vaqueros formations into the Eocene formation the indications point for a good well of at least 30-degree gravity oil. The sand is sharp and is heavily charged with gas, making the outlook very encouraging. Again the oil has dared to show in the formation south of Wartham Creek, south of the railroad track and the County Road, offering an affront to "Ye Geologists," and "Ye Oil Experts," of three years ago. "Yea, verily, oil exists where it is found"

Another Driller Goes to India

Frank G. Woodbeck, a well-known driller of this field, left for India very recently on the S.S. "Persia." Mr. Woodbeck goes for Thomas Hayes to The Burmah Oil ompany, Limited He will call at Honolulu, Yokahama, Kobe, Nagasaki, Shanghai and Hong Kong. At Hong Kong he will trans-ship for Singapore; at Singapore he trans-ships for Rangoon. He goes by rail from Rangoon to Prome, thence by river steamer up the great Irawadi River to Yenangyung, the headquarters camp of the oil fields of The Burmah Oil Company; he is due to arrive at Rangoon on January 10, 1912.

The Coalinga Gateway Oil Company, in which a number of San Jose people are interested, will shortly commence operations on their property in Section 18, 21-15.

Vancouver-Coalinga Oil Company

The Vancouver-Coalinga Oil Company, Section 14, 20-15.—Well No. 1 is 3790 feet deep with 8¼-inch casing; formation, out of the brown shale into blue shale. The contractors, Jim Walp and Jack Cypher, signed to carry the hole to 4000 feet with not less than the 6¼-inch; a good bonus was offered if the 8¼-inch was carried to that depth. The company stands a good chance to pay the bonus, as the pipe is free and going, and the formation is favorable.

Chicago-Coalinga Commences

The Chicago-Coalinga Oil Company, operating on the north 40 acres of the southeast quarter of Section 2, 21-14, are spudding in on Well No. 1. R. M. Cook has the contract to drill six wells on this tract of land. The territory is about 450 feet, oil of 20-gravity, carrying a large per cent of lubricating qualities. It is reported that the Standard Oil Company will build a line in as soon as a production of 100 barrels per day is assured.

Coalinga-Pacific Oil and Gas Company

The Coalinga-Pacific Oil and Gas Company, Section 7, 20-15.—Well No. 3 has given considerable trouble the past two years. Recently a shot was placed in the well and had the desired effect, blowing a piece of casing out of the way, which has permitted the cement to set and shut off the water. The job appears to be a success.

Dominion Oil Company

The Dominion Oil Company, Section 7, 23-17.—A bit was lost in the hole about ten days ago; failing to fish the bit out, the casing has been carried past the bit. The hard shell encountered has been passed through, entering a very fine looking sand carrying considerable gas; the bit was in this sand at last report. The well is 2435 feet deep with 8¼-inch casing.

Pluto Oil Company

The Pluto Oil ompany, Section 19, 25-19, have straightened out the hole and have 2700 feet of 8¼-inch casing in the hole,—are within ten feet, at last report, of the old bottom. The casing and every collar have been thoroughly examined, and the pipe goes back into the hole in first-class shape.

United Development Company

The United Development Company are rigging up on Well No. 1, Section 17, 20-15, and will be spudding in the later part of this week. Well No. 3, on Section 19, 20-15, is about ready to finish up; the cement has set over two weeks. Well No. 1 is producing; Well No. 2 is temporarily idle.

Wilcox Well Close to Sand

The Wilcox and Fleshacker well, on Section 12, 20-15, is 4460 feet deep with heavy 6¼-inch casing. The formation is blue shale; from the formation as shown in the Mohawk wells this Wilcox well will only have to go about fifty feet further to enter the pay sand.

Turner Oil Company

The Turner Oil Company, Section 2, 20-15.—Well No. 3 is 2945 feet deep, with 8¼-inch casing. There are two wells producing on this property, making fully 530 barrels per day of 21.5-degrees gravity oil, sold to the Standard under contract of last July.

Zier Oil Company

The Zier Oil Company, Section 1, 20-14, are completing their boiler plant; two new "60's" have been placed in position, when completed the plant will consist of four "60's," and will be well housed.

W. K. Oil Company

The W. K. Oil Company, Section 2, 20-15.—Well No. 8 is being re drilled; Well No. 10 is now 2890 feet deep with 8¼-inch casing; Well No. 11 is 1640 feet deep with 12½-inch casing. All work moving along satisfactorily.

Coalinga Mohawk

The Coalinga Mohawk Oil Company, Section 12, 20-15.—Well No. 1 is again being re-drilled. Well No. 4 is making about 450 barrels per day, 32-degree gravity oil, sold to the Standard; Well No. 2 is drilling.

SANTA MARIA

News from this District Written by W. D. MALTMAN

Brooks Oil Company

The Brooks Oil Company is making an effort to get a freer oil from its No. 2 and for that reason has discontinued pumping. A sand pump will be used for a few days and after that an air-compressor to open up the accumulated sand. This well has been producing an average of 200 barrels daily, the oil being marketed to the Hadley Refinery, and operators in the Cat Canyon field for fuel purposes. The well will be put on th pump as soon as it is cleaned out.

West Oil Company

The West Oil Company, adjoining the New Pennsylvania, is getting about 200 barrels of high-grade fuel oil from its No. 1. The well has shown a gradual increase in the quality of the oil and is freer of sediment than at any time since being brought in.

Santa Maria Enterprise

The Santa Maria Enterprise, near the Brooks, is getting its well ready for the pump. The casing was landed in 100 feet of rich sand and as soon as properly perforated a test will be made. The hole is 3100 feet deep with a 4½-inch casing and should rival its neighbor, Brooks No. 2.

Ideal Oil Company

The Ideal well, in the eastern field, while preparing its No. 3 for the beam lost a string of tubing and operations have been delayed. The hole is 3250 feet. Ninety feet of oil sand has been penetrated and when put in shape this well will undoubtedly become one of the big wells of the Cat Canyon field.

SUNSET-MIDWAY-McKITTRICK

Production Statistics

As usual the production of Midway was the greatest of any field in the State, being above two millions of barrels. Midway is now, without any question, the foremost oil producing district in the world; and at that, not only in quantity does Midway surpass all other fields, but likewise in value of the products produced. Midway's oils range from a low to a high gravity; from asphaltic to lubricating and refining oils. No paraffin base oils are, however, as yet produced in the wonderful field. For the exact statistics of the production of the West Side fields, under which the Sunset, Midway, McKittrick, Buena Vista Hills, Belridge and also Lost Hills oil producing districts are grouped, as well as Templor and Devils Den districts, and including the region south of Sunset, which goes by a variety of names, we request our readers to turn to our statistical page, in the forward part of the book, where are given the production, consumption, and storage figures, wells drilled, drilling, abandoned and producing and other statistical information of value to those interested in the California oil fields.

Taft's Freight Receipts

With the monthly freight receipts totalling $115,000, the town of Taft, two years old, ranks third in point of railroad business among the cities of California. Oil towns usually are a source of immense profit to the railroads.

It is rumored that the Honolulu gasoline-from-gas plant on the property in the Buena Vista hills, will soon be started manufacturing gasoline, but we have not been able to confirm the report. There is another news item current to the effect that the plant is to be sold to the Standard Oil Company, but run, if at all, under another corporate name

Work in the Elk Hills by Messrs. Green & Hutchinson, on section 4, 31-24, has been dinscontinued. Reason assigned, the depth of the ground and the question as to what the Government will do regarding that territory, which is stated to have been withdrawn, by a con temporary.

Gas is now delivered to the people of Taft at $1.00 per thousand cubic feet, a reduction having been made in the rates very recently.

Cuyama Valley, or the Cuyama district, as it is more familiarly known, is now being made the scene of a considerable rush of oil operators as light oil indications and seepages have been discovered there in quantities lately. Hundreds of acres of land have been located by prospectors. The Government, strange to say, has not withdrawn this probable favorable area.

In the case of the squatters on the property of Boust, of Boust City, otherwise known as Whiskey Row, the fight for possession still goes merrily on. The quarrel holds the interest of oil men because the claims of the squatters affect the title to thousands of acres of oil lands in Midway.

The Hibernia Petroleum Company is suing Mr. J. F. Davies for possession of the northeast quarter of the northeast quarter of Section 4, 11-23, Midway, claiming that they have complied with the terms of an agreement whereby they have had to expend $20,000 in developing said piece of land, and have paid $5000 in cash over to the defendant in the action, and that the latter refuses to give up the right to the property. Suit is for ejectment and adjudication of title.

The Expansion Oil Company has acquired a ten year lease to the northeast quarter of the southwest half of Section 30, 28-28.

The Townsite of Pentland, three miles east of Maricopa, has been sold to Messrs. Barlow & Hill for speculative purposes, at a price not stated.

Of interest to everyone who has business in the oil fields, or who may contemplate business in the Midway region, is the announcement of the compilation by Mr. Alfred Abbey of a complete directory of the Sunset-Maricopa-Midway district.

The British Cons. Oil Corp., Ltd., is installing three strong motors which will be used for pumping and drilling purposes.

The Coronation Oil Company's big well, which came in so far out on the Maricopa Flat, is proving a terrible disappointment; water has broken in and the product of the well is fully 50 per cent H2O.

Result Oil Company's well on Section 26, 31-22, has been cemented The Edmunds Oil Company's well on Section 32, also cemented off the water; depth, 2640 feet.

The Union Oil Company is preparing to drill up the Lakeview property in the near neighborhood of the Lakeview gusher; work on various wells was, of course, suspended when the Lakeview was flooding the country for fear of fire, but now a resumption of activity is to take place. Here's hoping they don't get another Lakeview!

The Sunset Western Railroad passed out of the control of the Southern Pacific on December 1st, and into the control of the Santa Fe Company, by which it will be operated during the next five years. The station from which passengers will leave Bakersfield to go to the West Side fields consequently, will not be at the other end of Bakersfield, but at the Santa Fe station, in the heart of that city, an additional convenience, as the Southern Pacific station is a long way from the business centre of Bakersfield.

The Western Water Company's water pipe-line into Taft has been completed and a subsidiary company is ready to distribute the water to the town, providing the present water company, known as the Taft Public Utilities Company, can agree on terms for the use of its pipes. The Utilities Company's water supply is woefully inadequate. The Western Company's is an utter necessity. The Western will probably win.

The Esperanza is preparing to drill two new wells on Section 32, Buena Vista Hills. The Mammoth and Eagle Creek holdings are reported sold to the oRthschild interests, of Europe. The report is periodic, but by no means are the same properties subject to the sale every time. The British, you know, are buying all California! The Mammoth recently lost two tanks of oil, the tanks themselves and one rig when a fire and explosion occurred on their property near Fellows.

Some of the Recent Wells

Following is a paragraph devoted to new wells, where we have been able to obtain information of same, in the various West Side fields:

The Mays Oil Company has brought in a new well on section 28, Midway, which came in with a big production but flowed by heads and so cannot be correctly guaged as yet. The production will, however, in all probability run into the several thousands, per day. The Engineers Oil Co., section 14, 31-22, Midway, has brought in well No. 1, producing from a depth of 1,795 feet, amount per day unstated. The California Amalgamated, located on property of the January Oil Company, or what was formerly the January's property, has secured a splendid well The production is rated at 1,500 barrels per day, steady flow. The Mammoth got a tremendous well about five weeks back, good for 8,000 barrels a day. The well was finished at a depth of 2,000 feet, gravity of oil was stated as 23 degrees (Beaume) and same is contracted for. The Hale-McLeod Oil Company got another big spouter about the same time the Mammoth well came in. The production of well per day was 2,000 barrels. K. T. & O. well 35, section 31, 12-23, is now being finished up in twenty-five feet or more of sand. There are a number of flowing wells around it. The Prestage Oil Company, operating in the Lost Hills, has entered a gusher sand at a depth of about 1350 feet. The production of course cannot as yet be estimated. The Maricopa Northern Oil Company got a good well around the time we last went to press. We have not yet heard anything about the completion of the well, but know that the well had every indication of being a gusher at the time the top sand was entered. The Midway Syndicate brought in a well at 3425 feet on section 4, 32-23, Midway, which flowed steadily at the rate of 2000 barrels per day. The Esperanza, section 32, 32-24, Midway, has a 2000-barrel well; still another on 6, 11-23, (Maricopa) which is flowing 400 barrels per day. There are without doubt a number of very interesting wells which have come in, but these will be mentioned in other places in this publication.

PATENTS RECENTLY GRANTED

The following recently granted patents of interest to the oil trade, are reported expressly for the California Derrick by J. M. Nesbit, Patent Attorney, Park Building, Pittsburg, Pa., from whom printed copies may be procured for 15 cents each:

Casing tongs, Walter Lewin, Coalinga, Cal., 1,008,654.

Apparatus for transporting oil. E. N. Mills, San Francisco, Cal., 1,008,980.

Lifting rig, T. J. Ehrhart, Sheepranch, Cal., 1,009,140.

Oil-well packer, (2) P. H. Mack, Bradford, Pa., assignor to Oil Well Supply Co., Pittsburgh, 1,009,327 and 1,009,328.

Well casing, B. U. Hiester, Grand Ridge, Ill., 1,009,515.

Walking beam, R. V. Longtime, Taft, Cal., 1,009,537.

Measuring liquid pump, R. F. Diserens, Fort Wayne, Ind., assignor t oWayne Oil Tank and Pump Co., same place, 1,009,943.

Gas well construction, G. H. Trainer, Salem, W. Va., 1,009,943.

Gusher and blow-out preventer, E. L. Savois, New Iberia, La., 1,009,998.

Working barrel for pumps, C. A. Waitz, Rouseville, Pa., 1,010,098.

Pump rod-connection, H. H. Wieck and W. L. Larson, Agate, N. D., 1,010,334.

Well drilling machine, Truman McCord and W. C. Bigler, Rew, Pa., 1,010,507.

Portable derrick, J. L. Taylor, Chicago, Ill., 1,010,530.

Oil filter, H. E. Walter, Pittsburgh, assignor to National Valve and Manufacturing Co., same place, 1,010,622.

Packing for pump plungers, J. F. Schiller, Philadelphia, Pa., 1,010,691.

Packing ring, H. B. Karlin, Stockholm, Sweden, assignor to De Laval Steam Turbine Co., New York, 1,010,770.

Splicing tool, Joseph Schutter, Silver Springs, N. Y., 1,010,963.

Well bucket, J. C. Huckaby and T. L. McMinn, Gunterville, Ala., 1,011,058.

Boring machine, W. H. Washburn, Wildwood, N. J., 1,011,098.

Assessments

Assessments have recently been levied by the following companies for amounts indicated: Atlanta Oil Co., 1 cent per share; August Oil Co., 1½ cents per share; Blair Oil Co., 3 cents per share; Bohemian Oil Co., 1 cent per share; Cal. Carbon Oil Co., 4 mills per share; Coalinga Unity Oil Co., 2 cents per share; Delano Crude Oil Co., ½ cent per share; G. . Oil Co.,R 1 cent per share; H. H. Oil Co., 3 cents per share; Kramer Model Oil Co., $3.50 per share; Lakeview Annex Oi lCo., 1 cent per share; New Castaic Oil Co., 1 cent per share; Oil Canyon Oil Co., 1 cent per share; South Kern Oil Co., 5 cents per share; South Midway Oil Co., 1 cent per share; The Rose Oil Co., 1 cent per share. Sale date of a majority of these stocks come at the end of December and in January. The Jewel Oil Company has extended the time to date of sale thirty days. Sale will take place December 30th. The Hamilton Oil and Gas Company will sell delinquent stock January 5, 1912.

Developements in Mexico

By ALLEN G. NICHOLS
President of the United Oil Company of Mexico

Mexico a Young Field

The Mexican field is a very young one.

It is only about five years since the Doheny interests started work at Ebano, and as that company was among the earliest and the most energetic in the new field, the history of their development would be practically the history of the progress of the Mexican fields.

Doheny Interests—Life of Wells

In the very short time they have been in operation, they have secured a tremendous acreage, located at various points. Their original holdings at Ebano consists of several million acres, on which they have completed something over twenty-five wells, most of them located at or near Ebano. In this particular section, the oil is somewhat heavy but has been found excellent for locomotive fuel, most of it being sold to the Mexican government for use on railway locomotives on the roads controlled by the government of Mexico. The wells vary in depth and production. One of them, that came in at about 1500 barrels per day, at the end of the first two years, is said to have been producing 2500 barrels per day. This will serve as an illustration of the splendid staying qualities of the Mexican wells, it being typical of this entire section that the wells gradually increase for a couple of years instead of gradually decreasing, as in other fields.

There is another instance of this at Topila. The East Coast Company's well at that point came in at about 500 barrels per day but before arrangements could be completed to take care of the oil, the production was nearly 8000 barrels and at the present time, is more than 3000 barrels per day, with a back pressure of two hundred and thirty-five pounds per square inch, all the well will stand without the fluid forcing its way up the outside of the casing.

Wonderful Juan Casiana Well

Still another instance of the long life of the Mexican wells can be found at Juan Casiana, where Well No. 7 of the Huasteca Petroleum Company has been producing now for about fifteen months. Here, also, the pressure is stronger than when the well was first brought under partial control, there being at the present time a pressure of several hundred pounds per square inch, the average production for the entire fifteen months having been between 18,000 and 25,000 barrels per day, which latter amount is still being produced. The officers of the company in charge of the work at that point feel confident that if the gate-valve were opened to its full capacity, the flow would at least be twice as much as at the present time.

This one well has produced nearly ten million barrels of oil and a very large percentage of it has been saved. It is taxing the capacity of a large pipe-line to transport the product from this partially closed well to storage at Tampico, and when the new line now being built is completed, it is presumed that the one well will nearly fill both lines, though they have other wells ready to turn loose at a moment's notice, if necessary.

The Famous Pearson Gusher

The great Portrero well, locally known as Lord Cowdray's gusher, came in last December, now nearly a year ago. For something like five months, it was absolutely uncontrolled but after many weeks of heart-breaking work on the part of the local management of the company, the well has been shut in so that at the present time the production is very small. Several million barrels of oil produced by this well have been saved in a series of very large earthen reservoirs, and a pipe-line is now completed from that point to Tampico, through which the product is now being pumped as rapidly as possible. It will take some time yet before this company can clean up the product already on hand, and until that time it is likely that the great gusher will be kept harnessed, if possible.

Work Along the Panuco River

Much of the new work now going on in the Mexican fields is along the Panuco River, in what is known as the Tampico District. This may be accounted for from the fact that this great river offers a splendid highway for the cheap, easy and rapid transportation of oil well material as well as crude oil. Vessels can safely pass up and down the Panuco River at any time of the day or night at any time of the year. The tremendous advantage of such transportation is known to every old oil producer.

Necessity of Transportation

There is no one thing that has so kept back the California oil industry as lack of transportation. Eight or nine years ago oil went from sixty or seventy cents per barrel to eleven cents, and was a drug on the market at that low figure, simply and entirely because we had no transportation. At that time there were no active pipe-lines to tidewater, few tank cars and practically no tank steamers. When such transportation facilities were provided, oil raised rapidly to sixty-five cents per barrel. The natural consequence of this was largely increased development, which again congested transportation facilities, and the present low price of the product is the inevitable result.

Some Active Developing Companies

The International Petroleum Company, headed by John Hays Hammond, are drilling at several places in the district before spoken of. This company own or control a number of large tracts in various sections of the country, and I understand, are drilling four wells at the present time on as many different tracts.

The Topila Oil Company, headed by Spellacy Brothers and Thompson, are already drilling on their tract of land at Topila, nearly opposite the great gusher of the East Coast Company at the same place.

The Dos Banderas are something like 1000 feet deep in their first well near Pueblo Viejo on the lake of the same name. This is, to a certain extent, new territory but is conceded to be a continuation of the same formation, and a large well is looked for at that point.

The United Oil Company, of Mexico, who control a very large tract between Topila and Panuco, touching on both rivers, are preparing to drill two wells on their holdings. Work will commence on one or both of them early in the new year. This company have a tract of land practically equal in size to the entire Kern River field, and the fact that transportation problems are practically solved from the beginning, makes it a very inviting proposition. There are completed and producing wells on three sides of their holdings and at a greater distance on the fourth side is the great gusher district of the Mexican fieds. By that, I mean, that the gushers to the south and southeast are even greater in capacity than those in the immediate neighborhood to the east, north and west.

The Mexican Premier Oil Company control three large tracts amounting in all to something like 25,000 acres. They have about completed preparations to drill on their Soledad property and it is likely that the tools will be dropping ere this intelligence reaches the readers of the Derrick.

In the vicinity of Panuco, the Gulf Coast and the East Coast, Williams and the International Petroleum Company are all drilling, with several others preparing to do so in the near future. The East Coast Company already have two wells completed here, one of which is a gusher of unknown capacity. It is producing at the present time something like 250 barrels per day, but is closed in as nearly as is possible. The experience of the same company at Topila taught them the necessity of being ready to shut in the well the instant they struck the oil-bearing formation. Such preparations were made and not a barrel of oil was ever lost from this well. Just what pressure there is o nthe gate-valve, no one knows, as there is no gauge, but the pressure must be enormous, because the valve is only cracked, yet the least turn open largely increases the flow while any attempt to more nearly close it results in the oil being forced up on the outside of the casing, and this in a well more than 1500 feet deep.

Flowing Wells the Rule

This is the big feature of the Mexican fields. The instant a well is completed, it commences to flow and continues to do so. There is no sand or water mixed with the oil, as in other fields, especially in this State. There is no sediment. The oil comes from the well absolutely clean. It does not require to be either settled, to remove the sand, or washed to remove the water or other foreign material.

Provision of Storage Facilities

Immense storage facilities are being provided by several different companies at Tampico, Klometer Six and San Geronimo. There are several companies at Tampico erecting storage tanks and building reservoirs and in addition to these facilities, exports have already started to a considerable extent. The Texas Company are sending out two steamers per week and it is reported that early in next month the Standard Oil Company will commence to ship one tank steamer per day.

Future of the Oil Fields of Mexico as Seen by Mr. Nichols

I firmly believe that the oil fields of Mexico are destined to be the largest in the world, and I believe will be more quickly developed than even the California fields were. This will be made possible, I think, by the fact that Mexico is so much nearer a practically unlimited market, being located at points easily reached by ocean going ships, without the necessity of constructing long, expensive pipe-lines. Then, too, it is recognized that the Atlantic Ocean is the principal fuel market of the world and that there are steamships enough to consume every barrel of oil that can possibly be produced, and at a point only a few days' sail from New York City, which is the greatest fuel market on the American continent.

Latest Oil Quotations on the San Francisco Stock Exchange

That interest in oil shares is still at its ebb, and that the turn of the tide is only just beginning, can be seen by looking at the following list of quotations of share prices on the San Francisco Stock Exchange. It is pitifully weak. But it holds a tremendous interest. To the man who wishes to purchase oil shares the time for investment at prices which will double and treble within, say, the next two years, is now. Stocks that have been as high (and with reason in demonstrable value) as $1.60 per share can now be purchased right on the exchange floor for 35 cents per share. That this will be the case for any great length of time appears unlikely; the consumption of oil is expanding and with expansion of the market against production the price of oil is bound to stiffen somewhat. With an increased price for oil at the well the resumption of dividends by various companies having oil in storage and producing regularly, naturally occurs. Resumption of dividends invariably brings back the market value of the stock. As this is not the editorial column, however, we herewith present a list of shares recent'y traded in and the prices thereof—both of which are small:

Company.	Bid.	Asked.
Associated Oil Stock	$43.75	.....
Brookshire	.....	.80
Caribou	1.10	1.15
Claremont	.....	.95
Coalinga Mohawk	.40	.50
Coalinga National	.05	.10
Cons. Midway	.03	.04
Dabney	.....	.10
Enos	.....	.20
Four	.12	.....
Illinois Crude	.11	.....
Maricopa National	.80	1.80
McKittrick	.09	.....
Midway Premier	.34	.40
Monte Cristo	.....	1.40
New Penn. Petroleum	.16	.50
Pacific States Petroleum	.19	.25
Palmer	.82	.85
Premier	.35	.....
Pyramid	.....	.37
Record	3.00	5.00
Republic	.30	.35
Silver Tip	.70	.....
S. W. & B.	.16	.17
Sterling	1.30	.....
Turner	.90	.....
Union	99.00	100.00
United Oil	.44	.46
W. K. Oil Co.	2.52½	2.60
Yellowstone	.....	.03
Storage Certificates	.34½	.....

Los Angeles Quotations

As ever, Los Angeles, the oil centre of California, displays

Producers.	Bid.	Asked.
Amalgamated Oil	$49.50	$51.00
American Pet. Co. (pfd.)	.....	75.00
American Pet. Co. (com.)	.....	.....
Associated Oil	43.00	43.75
Bear Creek Oil & M. Co.	.....	.75
Brookshire Oil	.50	.90
California Midway Oil Co.	.26⅛	.27½
Central	1.97	.....
Columbia	1.10	1.15
Consol. Midway Oil Co.	.03⅛	.03½
Continental Oil	.....	.25
Euclid Oil Co.	.25	.37½
Fullerton Oil	.....	4.50
Jade Oil Co.	.16	.20½
Maricopa Queen Oil Co.	.....	.36
Mascot Oil Co.	.....	.95
Mexican Pet. Ltd., "Pfd."	75.00	75.25
Mexican Pet. Ltd., "Com."	38.12½	38.50
New Pennsyl. Pet. Co.	.49	.....
Olinda Land Co. (Oil)	.....	.45
Palmer Oil Co.	.84	.....
Penn. Midway Oil Co.	.09	.....
Pinal Oil Co.	.....	7.00
Rice Ranch Oil Co.	.70	.....
Section Six Oil Co.	.....	.04
Trader's Oil Co.	74.00	.....
Union	99.87½	99.87½
Union Provident Co.	99.50	100.00
United Petroleum	99.50	.....
United Oil Co.	.44	.45
Western Union	.....	110.00
White Star Oil Co.	.16½	.20
Yellowstone Oil Co.	.01⅛	.....
Non-Producers.		
Nevada-Midway Oil Co.	.11	.....
Oleum Development Co.	.04	.04⅜

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The California Derrick's Complete Statistical Record of Production, Consumption and Field Operations in California, Month by Month During the Year 1911

(In barrels of 42 gallons each)

Month.	Production.	Consumption.	Monthly Surplus.	Av. Daily Prod.	Av. Daily Con.	Av. Daily Sur.
January	6,566,180	5,577,946	988,234	211,812	179,934	31,878
February	5,973,206	5,162,223	810,983	213,329	184,365	28,964
March	7,089,955	5,087,551	2,002,404	228,708	164,115	64,593
April	6,929,337	6,095,113	834,224	230,978	103,179	27,799
May	7,113,466	6,434,136	679,330	229,467	207,553	21,914
June	6,694,078	5,905,036	789,042	223,136	196,835	26,301
July	6,937,862	5,897,048	1,040,814	223,802	190,227	33,525
August	7,208,934	6,406,115	802,819	232,546	206,648	25,898
September	7,291,254	6,396,518	894,736	243,042	212,317	30,725
October	7,283,431	6,701,271	582,163	232,949	216,184	16,765
November	7,210,297	6,301,982	908,315	240,343	210,066	30,277
December	7,446,041	6,995,432	450,609	240,195	225,659	14,536
	For year	For year	For year	For year	For year	For year
Totals	83,744,044	72,960,371	10,783,673	229,192¼ bbls.	199,761 bbls.	29,431¼ bbls.

	Barrels.		Barrels.
Total production for year 1911	83,744,044	Total consumption for year 1911	72,960,371
Total production for year 1910	77,697,568	Total consumption for year 1910	66,172,373
Production gain, 1911 over 1910	6,046,476	Consumption gain, 1911 over 1910	6,787,978

Total consumption gain over production gain.....741,502 Barrels.

The Production and Operative Statistics of all the California Oil Fields In Order of Their Magnitude, for the Entire Year

Field.	County.	Rigs Completed	Wells Drilling	Wells Producing	Wells Completed	Wells Abandoned	Av. Production per Well per Month	Total Production to Barrels
Midway	Kern	325	199	447	295	42	4,025	21,584,566
Coalinga	Fresno	155	119	736	139	16	2,075	18,324,701
Kern River	Kern	98	15	1,605	136	26	731	14,078,390
Santa Maria	Santa Barbara	20	39	154	12	7	3,609	6,670,074
Fullerton	Orange	33	49	250	28	4	1,993	5,978,823
Sunset	Kern	105	57	196	94	7	2,363	5,559,069
McKittrick	Kern	57	17	178	36	5	2,564	5,477,532
Salt Lake	Los Angeles	21	11	245	19	7	950	2,794,233
Whittier	Los Angeles	133	22	141	6	1	632	1,069,437
Lompoc	Santa Barbara	3	5	20	5	1	3,312	795,000
Santa Paula	Ventura	35	35	264	21	2	163	515,675
Los Angeles	Los Angeles	..	..	415	3	.	86	429,528
Lost Hills	Kern	26	22	4	6	..	7,743	154,960
Newhall	Los Angeles	1	4	76	2	2	160	146,110
Summerland	Santa Barbara	1	2	131	.	..	45	71,255
Watsonville	Santa Clara	1	....	455	....	.	793	40,850
Puente	Los Angeles	1	.	56	.	..	45	32,895
Arroyo Grande	San Luis Obispo	..	2	4	.	5	427	20,500
Totals	All dists. and operations	887	590	4,942	800	129	See Foot Note	83,144,044

(Note—To obviate any possible ambiguity we have summarized these totals as follows. There were 887 rigs completed during the year in all the fields; an average of 590 wells drilling per month in all fields throughout the year; an average of 4942 wells producing throughout the year; 500 wells were completed in all fields; 129 wells were abandoned in the whole State, and the average production per well per month during the entire year is obtained by dividing the average total number of wells producing monthly, 4942 in number, into the aggregate average monthly production, 6,987,670 barrels, which gives a fraction of a barrel less than 1414 barrels per month).

CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 4 SAN FRANCISCO, CAL., JANUARY, 1912. No 7.

The Greatest Year in the History of the California Oil Industry

A Brief Review of Nineteen Eleven

By C. CARROLL WRIGHT

Close of a Wonderful Year

December 31, 1911, brought to a close the greatest year in all ways, in the history of the California oil industry.

Exceeding the output of 1910 by more than six million barrels, 1911 also showed a truly remarkable gain over the consumption of the previous year, the gain in consumption being greater than that of production!

No two other States produced as much oil as did California, our output totalling 83,744,044 barrels out of an estimated total of 220,000,000 barrels for the entire country; our consumption totalled 72,960,071 barrels. This tremendous consumption gain over 1910 is the feature of the year. Its importance overshadows every other point. The immense increase in the consumption was induced through the reduced prices to consumers of our fuel oils and the reduced prices were, of course, the direct result of the vast output of California's various districts. The increase in storage totaled ten and three-quarter millions barrels.

It may well be written of 1911 that it was a year of vast importance. Many matters in California oildom appeared to reach a crux which had been approaching each in its own sphere for several years previous.

Large Looming Factors

The crisis in the Independence Oil Producers Agency came to a head, was successfully met and passed. The Standard Oil Company of New Jersey, that great holding corporation for all the powerful subsidiaries of which the Standard Oil of California was one, was dissolved by order of the Supreme Court of the United States for having acted in restraint of trade in violation of the Sherman anti-trust law, thus making the Standard Oil Company of California a separate corporation, an entity and not a part of the wonderful organization which the genius of John D. Rockerfeller had builded up.

The Export Trade

California's export trade increased vastly, both as to products shipped and value of same, the increase over 1910 actually totalling 50,162,580 gallons, with the increase in money received for the total exportations amounting to no less than $1,516,672. We are giving a separate paragraph to a fuller discussion of the export trade.

Important New Territory

Discoveries and development of new territory in the State of California were several and of the utmost importance. Three or four discovery wells vied with each other in the matter of precedence as to their value to oil operators of California and the industry in general. These were:

The opening of the district tributary to Fullerton, where the Menges well came in good for 3000 barrels per day of light gravity oil; the Standard's remarkable find in the last month of the year in Coalinga, where a new, light gravity and excellent refining oil, having a parraffin base, has been obtained; the important extension of the Coalinga South Field by the Canadian-Coalinga Oil Company, which brought in its splendid light-gravity-oil gusher several months ago; the Amalgamated's excellent strike in the La Habra Valley; the development of the new Belle Ridge field. With these finds, but ranking second in importance, comes, too, the discovery of the shallow oil field of Coalinga. The development of Lost Hills deserves separate attention; while the field was not discovered in 1911, its development to date has been almost entirely accomplished during 1911. Lost Hills is, today, acknowledged to be a proven field having a valuable refining oil. The extent of the field is now known to be much larger than was at first declared to be the case. The principal interests operating in Lost Hills at present are: Crocker-Cameron interests, operating the Universal Oil Company; Standard Oil Company, Associated Oil Company, Union Oil Company. There are, too, numerous other companies having valuable proven territory. During the last month of the year Lost Hills produced 44,395 barrels of oil. The territory also boasts a pipe-line. The discoveries in the various places have, of course, stimulated development in each district.

New Work

Development work was done over practically all the State, from the southernmost field as far north as the Livermore field, in Alameda County, where the old Alisal Oil Company made its strike several years back and where the Independence Oil Company is now drilling, with two other companies. In the Vallecitos field encouraging signs have been about the most that has thus far been encountered, but it is thought the oil will be struck in the very early future. The Cat Canyon, Santa Maria field

was definitely extended during the year. (See Mr. Maltman's review of Santa Maria). Much more was learned concerning the formations of the Midway field, the limitations of the Maricopa-Sunset field; the development of the new Belridge District, or "McKittrick Front," enhanced the value of property in that region very materially. New work was done also, and with some success, in Humboldt, Napa and Mendocino Counties. Nineteen eleven was a year of prospecting from one end of California to the other. Almost every probable petroliferous region was investigated and witnessed drilling. It was a year of unsurpassed interest and development and one that has left stability in the place of uncertainty. One of the reasons for the new stability has already been detailed—the broadening of the market; but another and very interesting feature of the year was the enactment of certain legislation which was very badly needed.

The Big Legal Features of 1911

First and greatest of these is the case of the Government vs. The Southern Pacific Company. This tremendous action, for which the Government is preparing to fight to the last ditch and for which the Southern Pacific has been girding its loins, figuratively speaking, for a number of years past, is now believed to be close to a trial. (Note: This case was discussed in the December Derrick).

Second to this action in importance is the question—not yet decided: What Disposition Shall the Government Make of Its Withdrawn Oil Territory? This is a very vexatious problem and one over which a battle royal will be waged. Operators in California are divided in their opinion as to the advisability of a leasing system, which appears to be advocated by the Government and Eastern Congressmen, while the California operators do not seem to be able to get together, or to put up anything but a divided front. The next session of Congress, it is thought, will see the question of the disposition of these vast oil holdings, with their huge wealth, definitely decided.

The determination during 1911 that President Taft's withdrawal order of September 27, 1909, was legal and valid, was a most welcome decision of a troublous legal matter, for the reason that many oil operators had taken advantage of a legal ambiguity which existed and were operating on territory which they claimed was open to entry if the President's withdrawal order was not valid.

The passage of the remedial law of Congressman S. C. Smith put to rest the uncertainty prevailing in the minds of many operators the title to whose lands was in jeopardy through transfers of interest prior to the time of making application for patent, which, under the "Yard Decision" of the Interior Department of the Federal Government, would have been denied. The text of Congressman Smith's bill provided that a patent shall in no case be denied to or for any lands "heretofore located or claimed under the mining laws of the United States, containing petroleum, mineral oil or gas, solely because of any transfer or assignment thereof, or of any interest or interests therein by the original locator of locators or any of them"—no matter to whom. The law further provided that if the claim was valid and regular in all other respects, patent should be granted the holders of the property. This law annulled the "Yard Decision" of the Department of the Interior and validated claims aggregating 51,800 acres. It became a law March 2.

Production

The total and exact amount of the oil production of the entire State for 1911 is 83,744,044 barrels, an average daily production for the entire year amounting to 229,194¼ barrels. The district record for production is held by the Midway field which, with the huge total of 21,584,566 barrels, exceeds Coalinga's 18,324,701-barrel production by 3,289,865 barrels. Midway's gain of ten million four hundred thousand odd barrels not only practically represents the surplus for the entire year, but actually is four million, four hundred thousand barrels in excess of the total increase of 1911's production over 1910. This marvelous output is greater than that of some of the record productions of the Eastern States—and Midway, though California's greatest producer, is but one field out of twenty. It might be added, however, that this one field produced 25 per cent of the entire output. Even at that the production was not by any means as great as it easily could have been had there been a market for all the oil producable. This market question is also the reason for Coalinga's slightly reduced production. Many leases were shut down during the year in both fields, at various times. In our opinion California is easily capable of producing 100,000,000 barrels of oil per year should the market require it. Even Kern River, with its exceptional storage and shipping facilities, did not produce as much oil as during 1910—for the same reason—the market did not appeal strongly enough to operators to make a greater production attractive from a financial viewpoint. Kern River's production totaled 14,078,390 barrels for the year. Santa Maria's production comes next in order of magnitude. Like that of Coalinga and Kern River, it is a restricted output, and smaller. Exact amount, 6,670,074 barrels. Fullerton increased almost a million barrels, the total output being 5,978,823. Fullerton's new wells, several of which were gushers of very high gravity oil, materially aided in swelling the output. That Santa Maria's output exceeds the separate outputs of McKittrick, Sunset and Fullerton will be a surprise to those inclined to consider the San Joaquin Valley fields as a rule far greater producers than the other fields of the State. As a matter of fact, Fullerton's output was second to Santa Maria's, then followed the Sunset and McKittrick districts, the fourth and fifth sized fields respectively, in the valley. Salt Lake produced half as much oil as McKittrick, in round numbers, and Whitier considerably less than half as much as Salt Lake. Salt Lake displayed quite a decline. Lompoc increased its output by approximately 103,000 barrels. Santa Paula's output was 23,000 barrels greater. Los Angeles dropped, roughly, 37,000 barrels. Lost Hills appears on the producing list for the vrst time, its production for the year, commencing with August, 1911, totaling 154,960 barrels; this brings it, as a producing field, some eight and a fraction thousand barrels above the year's total output of Newhall. Then follow Summerland with 71,255, a drop of close to 3500 barrels; Watsonville with 40,850 barrels, a gain of 4200 barrels; Puente with 32,895 barrels, representing a decline of 6000 barrels, and Arroyo Grande with a total output of 20,500 barrels for the year. Arroyo's decline was close to 2000 barrels.

Following is a list of the fields with their output's during 1910 and 1911 for comparison; the various other statistics are given on our statistical page:

	Production.		Barrels of 42 gals. each.	
Field.	1910.	1911.	Increase.	Decrease.
Midway	11,174,207	21,584,566	10,410,259	
Coalinga	18,651,470	18,324,701		326,769
Kern River	14,776,435	14,078,390		698,045
Santa Maria	6,909,620	6,670,047		239,573
Fullerton	5,044,001	5,978,823	934,822	
Sunset	9,218,904*	5,559,069		3,659,835
McKittrick	5,471,613	5,477,532	5,919	
Salt Lake	3,263,104	2,794,233		468,871
Whittier	1,198,260	1,069,437		128,823
Lompoc	698,210	795,000	96,790	
Santa Paula	492,147	515,672	23,528	
Los Angeles	466,514	429,528		36,986
Lost Hills		154,960	154,960	
Newhall	160,428	146,110		14,318
Summerland	74,725	71,255		3,470
Watsonville	36,660	40,850	4,190	
Puente	38,960	32,895		6,065
Arroyo Grande	22,310	20,500		1,810

*1910 was an unusual year for Sunset because of the Lakeview gusher's phenomenal output.

The production of each district, month by month, has been published as determined in the succeeding issues of the Derrick, during the past year, with the exception of the November and December statistics, which are given on another page of this issue.

Consumption

The increase in consumption in 1911 was marked, and, in view of the cry so often raised during the latter part of 1910 that practically every market was absorbing its uttermost capacity, was an intense surprise. The consumption for 1910 totalled 66,172,373 barrels, while that for 1911, as already shown, amounted to 72,960,371 barrels, the total gain in consumption therefore amounting to 6,787,978 barrels. This gain was due exclusively to the enterprise, the organization of and the competition between the great marketers, plus the surplus production which cheapened the oil to the consumer. Economy, when added to the efficiency of fuel oil, is an argument which the consumer is unable to withstand. The consumption month by month is given on our statistical frontispiece, with other very valuable statistics. It is of very great interest to note the fact that the last month of the year saw consumption only less than half a million barrels behind production, while for one month the surplus was more than two million barrels.

The Growth of Economy

One tendency not to be disregarded, which took a decided form during 1911, was the tendency towards economy in every department of the oil business. This tendency was very marked. It was displayed by the numerous consolidations of oil companies which all led to the elimination of unnecessary expense in the management and was, therefore, of decided value and advantage to shareholders. It was shown in the adoption of new and more econmical methods of operation, such as the pumping of wells by electricity, where a great saving is being effected. There must, at this time, be fully two hundred wells pumping with electrical power. The use of gas became a prominent factor in cutting down expense in pumping, gas engines being installed on many leases, operating on the gas made by the wells. Still another form of saving largely adopted by companies with a considerable production was the use of topping plants for "skimming" the lighter constituents from the fuel oils, while the installation by the Reward Oil Company and several other companies of plants for rectifying their emulsified oils by the electrical process, was a very considerable advance in economy.

Various Interesting Matters

In all probability the most valuable invention which uses California oil was the Grine-Nelles gas producer. An account of this invention, of a brief nature, was given during the year. Diesel engines did not receive any great amount of attention in California as far as we know, though there are now becoming common in Europe. The manufacture of gasoline from gas was successfully undertaken by the Honolulu Consolidated Oil Company. Natural gas gasoline was also manufactured from the gas coming from the Menges well, which is rich in gasoline. The Standard Oil Company made use of some of its tremendous gas resources in the Buena Vista hills by piping the natural product to Bakersfield and supplying the oil regions with light and fuel. The prospect for the broadening of the use of natural gas in California assumed a very bright hue at the close of the year, when it was definitely learned that Los Angeles was to be supplied with the product of the Honolulnu's huge gas wells in the Buena Vista hills. Further particulars concerning this matter are given on another page. There were a number of new refineries constructed during the year, of which the largest was "El Segundo," Standard Oil's southern refinery. The manufacture of liquid asphalt received a large impetus, largely through the demand of the country for good roads.

In the Sunset field the water evil gained alarmingly, due to inadequate provision by law for the care of wells by the county officer when companies are unable or unwilling to care for wells into which water has broken and is running into the oil strata. Sunset is a spotted field and one in which there seems to be an ever changing series of formations. The water evil should be checked before it becomes too late and the field is ruined.

Exports.

The total petroleum exports from the United States for 1911 reached the vast figure of 1,622,644,920 gallons having an aggregate value of $98,936,795. The Government's statistics show that the exports for 1910 totalled 1,397,095,440 gallons with a value of $88,576,119, so that a very large increase both in the exports and the values of the oils distributed is represented, the exact increases being 225,549,480 gallons, valued at $10,369,676.

California's shipments increased very largely as stated. There was exported from San Francisco during 1911, 145,888,681 gallons of all kinds of oils having a total value of $3,816,350. All the figures of interest regarding San Francisco's exports for the last two years are shown in the following comparative table, giving the classes of oils, shipments and prices for 1910 and 1911:

San Francisco's Exports

	1910.		1911.	
Classes of Oils Dist.	Gallons.	Dollars.	Gallons.	Dollars.
Crude	62,621,932	920,016	60,966,338	883,249
Napthas	83,520	17,042	190,233	33,990
Illuminating	30,256,304	1,193,010	78,228,087	2,681,093
Lubricating and Paraffin	533,655	129,424	532,707	118,161
Residuum	2,230,680	40,186	5,971,316	99,857
	95,726,101	2,299,678	145,888,681	3,816,350

What the Standard Oil Company Accomplished During 1911

The close of 1911 saw the Standard Oil Company of California a separate corporation and the greatest single company in the greatest oil district in the world. Aside from the forced serverance of the ties linking the management of the Standard of California with the Standard Oil Company of New Jersey, by the edict of the United States Supreme Court, the largest point of interest concerning the California Standard is their phenomenal activity during the past year, which was exerted in every department of the oil producing, refining and transportation business. In short, the Standard took a course of action which will practically double their present capacity and business, the result of a remarkable foresight as to where the future oil business of America will be most largely centered. The first step in this extraordinary development, or at least the most important single development undertaken by the company was, of course, the construction of the "El Segundo" refinery at Manhattan Beach, located on a tract of land comprising close to 1000 acres fronting on the Pacific, so that Manhattan Beach will possibly parallel Richmond, where the greatest refinery in the West is located. El Segundo is now operating ten stills and turning out approximately 6000 barrels per day.

The oil being refined in El Segundo at present is being run from Northam, La Habra Valley, by gravity the entire distance. The Standard built a tank farm at Northam during the early part of 1911 to accommodate oil to be used in El Segundo. The storage constructed at Northam was in the form of 55,000-barrel steel tanks. By the time the Derrick is on the press the full fifteen stills of El Segundo will be in operation. El Segundo will be dependent for some time at least on the Fullerton and Whitier fields for its refinable product. For a production of its own, the Standard purchased and leased a great deal of oil territory in the southern fields and has been vigorously developing same. In the meantime the production of several companies has been signed up, among them that of the Murphy Oil Company. Few people realize what an outlay the El Segundo refinery requires. Not only have a pipe-line and laterals, a tank farm and a large area of land been necessitated, but the construction of the refinery itself has been a costly matter, while the building of the great pier into the ocean, for delivery and receiving purposes, requires an enormous amount of money. Further than this, as business grows, additional ships for carrying the oil will have to be purchased and ultimately, it is believed, there will have to be a pipe-line constructed from the Midway district, or

at least a line tapping the Kern County fields, over the Tehachapi mountains and down to El Segundo, because the southern fields will not be able to supply both the Union and Standard Oil Companies with sufficient oil for their refineries. The ultimate capacity of El Segundo is to be 30,000 barrels daily, equalling that of the Point Richmond plant.

Standard Oil greatly increased its storage capacity during the past year. In the Kern River field alone eight 500,000-barrel reservoirs were built, and, if we are not mistaken, 5,000,000 barrels additional was constructed, in reservoirs with a million barrels capacity each. The company doubled its pipe-line capacity from the valley fields to Richmond and at the present time is capable of handling 50,000 barrels of oil per day. An asphalt refinery at Point Richmond was provided for during the year; the cost of this refinery was given out as $750,000. We do not know whether it has yet been constructed or not.

The Standard's operations as a producer were most successfully conducted. Good wells obtained in the Midway and other districts. The Standard handled in round numbers 22,500,000 barrels of oil in 1911, or more than 25 per cent of the entire California production. Of this amount of oil over 7,000,000 barrels was placed in storage and 15,000,000 barrels was shipped. This means that in the past year there was stored 3,500,000 and odd barrels of oil more than in 1910; and a gain in shipments of 3,460,000 barrels. The runs, shipments and storage of the Standard Oil Company, month by month during 1911, are given in full in the following table:

Month	Runs	Shipments	Storage
January	[illegible]	[illegible]	[illegible]
February	[illegible]	[illegible]	[illegible]
March	[illegible]	[illegible]	[illegible]
April	1,805,130	1,173,413	631,717
May	[illegible]	[illegible]	[illegible]
June	1,746,772	1,191,948	554,824
July	[illegible]	[illegible]	[illegible]
August	2,037,873	1,442,169	595,401
September	2,025,126	1,550,530	474,596
October	[illegible]	[illegible]	[illegible]
November	2,085,347	1,488,122	597,225
December	2,178,106	1,456,432	721,674
Total	[illegible]	[illegible]	[illegible]

California Production for and Field Operations During November and December 1911

Following is our regular detailed statement of production, consumption and operation figures for the month of November, omitted from the December issue for lack of space; this, together with the December statement, is fully covered in our yearly review statistics (see frontispiece) for which reason we are not giving a detailed analysis of either the November or December productions and operations, other than the tables herewith presented:

Field.	County	Rigs Comp.	Wells Drilling	Wells Producing	Wells Completed	Wells Abandoned	Production Month
Kern River	Kern	9	6	1,604	9	16	1,071,000
McKittrick	Kern	4	16	195	4		470,346
Midway	Kern	6	164	542	14	2	2,004,945
Sunset	Kern	17	43	212	8	8	548,760
Coalinga	Fresno	12	101	762	15		1,516,867
Watsonville	Santa Clara	....	1	5			3,600
Arroyo Grande	San Luis Obispo	1	2	4			1,950
Lompoc	Santa Barbara		5	24	2		78,200
Santa Maria	Santa Barbara	....	40	168			585,681
Summerland	Santa Barbara	....	2	130			6,020
Santa Paula	Ventura	1	34	269	1		44,972
Newhall	Los Angeles	....	3	78		1	11,389
Salt Lake	Los Angeles	4	14	269	2	2	227,039
Los Anveles	Los Angeles	....		415			34,620
Whittier-Coyote	Los Angeles	....	24	147			102,509
Puente	Los Angeles	....	1	56			2,500
Fullerton - Brea Canon	Orange	2	55	257	2		467,984
Lost Hills	Kern	6	24	6	1		31,915
Salinas Valley	San Benito and Monterey	....	3				
Repetto	Los Angeles						
		62	538	5,143	58	21	7,210,297

Summary

	Barrels.
Stocks, Oct. 31, 1911	41,340,578
Production, Nov., 1911	7,210,297
	48,550,875
Consumption, Nov., 1911	6,301,982
Stocks, Nov. 30, 1911	42,248,893
Daily average consumption	210,066
Daily aferage production	240,343
Daily aperage surplus	30,277

The December Production, Field Operations and Storage Statistics

Kern River	Kern	7	5	1622	5	2	1,082,675
McKittrick	Kern	6	14	197	6		505,431
Midway	Kern	23	146	546	28	1	2,078,392
Sunset	Kern	12	40	208	7		539,710
Coalinga	Fresno	6	103	763	4	1	1,598,335
Watsonville	Santa Clara	....	1	5			3,720
Arroyo Grande	San Luis Obispo	....	1	5			2,650
Lompoc	Santa Barbara	1	6	24			71,500
Santa Maria	Santa Barbara	4	33	160	3	4	565,176
Summerland	Santa Barbara	....	1	130			5,790
Santa Paula	Ventura	2	26	266	3		50,807
Newhall	Los Angeles	....		412		2	34,751
Salt Lake	Los Angeles	2	23	147			112,169
Los Angeles	Los Angeles	....	1	56			2,550
Whittier-Coyote	Los Angeles	....	3	67			10,405
Puente	Los Angeles	....	13	267	1		224,888
Fullerton-Brea Canon	Orange	1	53	254	4	1	512,697
Lost Hills	Kern	4	24	8	1		44,395
Salinas Valley	San Benito and and Monterey	....	2				
	Los Angeles	....	1				
Repetto							
		68	496	5138	62	11	7,446,041

Summary, December

	Barrels.
Stocks, Nov. 30, 1911	42,248,893
Production, Dec., 1911	7,446,041
	49,694,934
Consumption, Dec. 1911	6,995,432
Stocks, Dec. 31, 1911	42,699,502
Daily average production	240,195
Daily average consumption	225,659
Daily average surplus	14,536

Note.—The large gain in oil consumption made during December has been discussed in the yearly review.

Companies Amalgamate

One of the most important developments of the past month in the oil industry of California was the organization of the Seaboard Oil & Transit Company by prominent oil men of Los Angeles.

The new company is incorporated with an authorized capitalization of 10,000,000 shares, par value $1.00 each. Its purpose is to acquire by the exchange of stock or otherwise, a large number of valuable oil properties in the various districts of California and Mexico.

J. R. Riggins, one of the best known oil men in the State, has been selected president and general manager. Frank D. McClure, a well known corporation attorney, is on the directorate. Allen G. Nichols, is vice-president. Mr. Nichols has been actively engaged in oil operations and oil journalism since the early day of Beaumont oil. There is, perhaps, no man in the State of California better posted on the general oil situation, nor one who is more familiar with the individual properties throughout the State of California and the Republic of Mexico. C. A. Goodrich is secretary and William Moore, an oil man who for a number of years has represented Canadian capital in the California fields, is treasurer.

The properties which have been and are being taken over as given to the Derrick by the Seaboard management are as follows:

42 acres at Coalinga, deeded land.
440 acres in Devil's Den Oil District, deeded land.
20 acres in North McKittrick Oil District.
400 acres or more in North McKittrick Oil District.
40 acres in Sunset Oil District.
40 acres in Maricopa Oil District.
20 acres in Sunset Oil District.
10 acres in Kern River Oil District.
10 acres in Kern River Oil District.
30 acres in Kern River Oil District.
640 acres in Ventura County.
60 acres in Newhall District, deeded land.
70 acres in Newhall Oil District.
3000 acres or more in Topila Oil District of Mexico.

Note.—These parcels of land all represent individual properties.

Before this issue of the Derrick reaches its readers it is believed that the control of all of these properties will be in the hands of the new corporation. The plan has met with a prompt response on the part of the stockholders of the original corporations and the consolidations are being effected much more quickly than was anticipated when the company was organized. The properties of the Madison, Lady Washington, Templor-McKittrick, Ventura Oil Development and United Oil Company of Mexico, are already a part of the holdings of the "Seaboard."

As soon as each proposition is formally ratified by the shareholders, the original companies will be dissolved, the purpose being to eliminate all unnecessary corporation and operating expense.

The companies holding the several properties represented a total capitalization of about $14,000,000. The organization of the new company has reduced this combined capitalization to ten million shares, and of this there will be, it is said, approximately four million shares left in the treasury.

It will be remembered by those long associated with the oil business that it was under conditions similar to the present situation in the oil industry that the Associated Oil Company and the Union Oil Company were organized. The nucleus of the Union Oil Company consisted of five small companies. Originally both the Union and the Associated held properties far smaller in acreage than those that are now being taken over by the Seaboard Oil & Transit Company.

The California Derrick does not say that the Seaboard Oil & Transit Co. will score as great success as either of the corporations named above. The Derrick does believe, however, that starting out with greater holdings than either of those corporations had at their beginning, the Seaboard has a management which, in our judgment, is competent to score a large success, provided the general conditions in the oil industry will favor them in their efforts and that the management will work solely in the company's intersts. We might add that companies with fully as good prospects as has the Seaboard Oil & Transit Company have been wrecked; and companies with far slimmer chances have made a big success. The success of an oil company depends largely on the following: conservative methods of finance; good property; **personal honesty and integrity of the officers;** good conditions in the oil business; economical and good management by people who understand the oil business.

Should the new corporation only accomplish one-tenth or, say, one-fifthieth part of the success of the Union Oil Company this will mean generous profits to all of the various shareholders on the basis on which they are at present securing their stock. One thing is certain: The plan of consolidation is to be commended and no better time than the present could be selected to effect such a consolidation. The experience of the past eighteen months has proven a very serious hardship to almost all small companies.

We should not be surprised if the step taken by the Seaboard Oil & Transit Company were to be followed by many more important amalgamations, all of which will, doubtless, be to the interest of the various stockholders represented therein.

Particularly important is the property already secured in Mexico by the Seaboard Oil & Transit Company. This acquisition includes really some seven properties comprising a total of over 3000 acres, formerly the properties of the United Oil Company of Mexico.

A representative of the Derrick recently interviewed two of the best posted California oil men who made a thorough investigation in person of the Mexican oil situation, and who have large oil interests in the Southern Republic. Neither of these gentlemen have now or ever had any interest in these particular properties which were secured personally from the owners by Allen G. Nichols, vice-president of the Seaboard Oil & Transit Company. Both of the gentlemen in question state that there is no better located oil land in the territory tributary to Tampico, Mexico, and that one producing well on this property will entirely justify the capitalization of the Seaboard Oil & Transit Company regardless of all of their valuable California holdings. They also state that they have investigated the wells now producing on three sides of the Seaboard's Mexican property, and in their judgment believe there is no question about the same oil bodies existing in the Seaboard lands. Mr. Nichols is now in Paunco, Mexico, where he will stay, overseeing the commencement of operations on the Seaboard's property. It is expected that several wells will be started immediately as the material is on the ground.

TO PROSPECT IN LINN COUNTY, OREGON

As a result of the interest aroused by Mr. Wilson Blaine, of Albany, Oregon, in the various oil and gas indications of Linn County, business men of that city have formed the Willamette Oil Company with a capital of $5000, of which sum more than half has already been paid in, to prospect in the country immediately surrounding Albany which bears most likelihood of being oil-bearing, with the idea in mind of finding out just exactly what the formations are and whether it would pay to develop on a larger scale. All the money is being subscribed by Albany people, and most of it thus far raised was obtained in one meeting. None of the officers of the company are to draw any salary and the money raised is to be used only for legitimate expenses in actual work. The backers of the company hope to have leased the proprties which appear most desirable and to have begun operations within two months. They expect to sink an 8-inch well to a depth of not less than 2500 feet and thus to ascertain exactly what petroliferous or carbonaceous deposits there are in their district.

The Diesel Type Engine

Written Especially for the California Derrick
By PAUL W. PRUTZMAN,

Consulting Chemist and Petroleum Engineer, Consulting Scientific Editor of the California Derrick.

The Diesel type of internal combustion engine, which during the last year has attracted much attention in the technical press, holds out prospects for a very material addition to the market for California petroleum, using as it does, a refinery product hitherto available only as fuel under steam boilers, and there competing directly with crude. The truly remarkable performances of engines of this type are well known to the steam engineering profession, but it may be doubted whether the petroleum industry fully realizes how large a market the general introduction of this type of power-plant would open to the liquid products of our heavy oil refineries.

The Diesel type engine, a German invention of late date, resembles in the main the ordinary form of gas engine, at least to the extent that the fuel is burned directly in the cylinders, thus compacting the power-plant into the generating unit proper. But it differs from the gas or gasoline engine in two very important respects. The first, that the fuel is not mixed with the combustion air before compression, but is injected into the already compressed and highly heated air, thus fitting this type of engine for the use of heavy and non-volatile oils, and incidentally avoiding all the difficulties and annoyances due to ignition and carburation devices. The second point of distinction follows from the first, and is hardly less important—that owing to the introduction of the fuel charge during an appreciable portion of the power stroke, the rate of flame propogation is very slow as compared to that in the cylinder of a gas engine, and thus the very high initial pressures incident to the explosion of ready-mixed charges are avoided. This type of unit may, therefore, be properly designated a combustion, rather than an explosion engine—the importance of the distinction may hardly be overestimated, as the avoidance of high initial pressures greatly reduces the shock and strain which, in a gas engine, occurs at each explosion. Indicator cards from engines of this type closely resemble those from steam engine cylinders, and the fact that at no point in the power stroke does the pressure rise materially above the compression pressure renders it mechanically feasible to build very large units in this type, without incurring the excessive maintenance charges to which the gas engine is subject. The high percentage efficiency shown by Diesel type engines is largely due to the internal or heat economies which follow from this desirable pressure cycle, though the very remarkable financial economy may, in most cases, be attributed largely to the use of a very low-priced fuel, not available in engines of the explosion type.

Heat engines, that is, engines in which the power is actually generated within the cylinder, are of three principal types:

Explosion engines of the two-stroke cycle pattern, such as are used in small units in marine work, in which a ready-mixed explosive charge is fired at every revolution of the piston.

Explosion engines of the four-stroke cycle pattern, such, for instance, as the ordinary automobile engine, in which an explosive charge is fired at every alternate revolution of the piston.

Combustion engines of the four-stroke cycle pattern, such as the Diesel type, in which the liquid fuel requisite is injected into a charge of compressed pure air at every alternate revolution of the piston.

The injection principle has also been applied to two-stroke cycle engines, and with some success in very small units, but to the present engines of this pattern have not made themselves felt in the market.

Each of these types of engine has its advantages and disadvantages under certain conditions, as each has its limitations regarding size, flexibility and cost, either or which may be the controlling factor in any given case. A brief summary of the cycle of operations in each type, and of the limiting conditions, is given below.

The two-stroke, or, as it is commonly called "two cycle" explosion engine, operates in the following manner. Gas, or the vapor of some volatile spirit such as gasoline, engine distillate or alcohol, is blended outside the cylinder with the proper proportion of air to form an explosive mixture. The piston being sown, or at the outer end of the stroke, the proper quantity of this mixture is forced into the cylinder, having been gently compressed in the crank-case or by a separate pump. The entrance of this charge displaces and forces out the burned gases from the previous explosion, this emptying and refilling of the cylinder taking place during a very small portion of the revolution, while the crank is passing outer dead center. The piston then rises, passing and closing both inlet and exhaust ports, which are in the cylinder wall, and compresses the charge to a predetermined extent, which is usually, at full load, the highest pressure which can be had without danger of pre-ignition. Somewhere near upper dead center (the exact point being fixed by speed, fuel and other conditions) the charge is exploded by means of electric spark or other device, pressure rising instantly, by reason of the expansion of air due to heat of combustion of the fuel. This expansion is timed to take place as soon as possible after inner dead center is passed. The piston then recedes, the combustion gases expand, furnishing the power, until near outer dead center the ports open, first the exhaust, by which the slight terminal pressure is released, and immediately thereafter the inlet port, by which a fresh charge is admitted and the burned gases displaced.

It will be seen that a complete cycle of operations—charging, compression, ignition, explosion, expansion and exhaust, takes place in one revolution or two strokes of the piston. The pressures in the cylinder at various portions of the cycle will, of course, vary widely with size and speed of engine, efficiency of cooling system, kind of fuel and other factors. A well designed engine, operating under favorable conditions, will in-

dicate, not over fifty pounds at the end of compression stroke, from two to three hundred pounds just after ignition, and from five to twenty pounds per square inch just prior to opening of exhaust port. Pressure then drops to or even below atmosphere until exhaust port closes, and builds up during compression stroke.

The two-cycle engine has the great advantage of an entire absence of valves, these being replaced by the cylinder ports, opened and closed by piston travel. It also has one power-stroke to each revolution of the piston, and, therefore, generates more power per cubic inch displacement of the piston than a four-cycle engine. Its main disadvantage is high fuel consumption, due in part to a loss of explosive mixture through exhaust port, and in part to a mixture of burned gases with the explosive mixture, which causes a rather low heat efficiency.

This type of engine has never come into very general use in large units, but is a desirable type for small installations where extreme simplicity is more desirable than the maximum of economy. By he use of certain auxiliary valves and a pumping cylinder, the efficiency of the two-cycle engine may be raised nearly to that of the four-cycle type, and the power output per cubic inch displacement to nearly double, but by these the simplicity of the engine is lost.

In the four-cycle type of explosion engine, two complete revolutions of the crank are required to make up the cycle of operations. Starting at the same point as above, at the outer center following the expansion stroke, the exhaust valve in head of cylinder is mechanically opened and held open during the entire in-stroke of the piston, the burned gases being thus completely forced out, except from the clearance or compression space between piston and cylinder head. The exhaust valve then closes and inlet valve opens, both near but not strictly on dead center, and on the out-stroke of the piston, the mixture of air and gas (or vapor) is aspirated into the cylinder, filling it at slightly below atmospheric pressure. Near outer center the inlet valve closes, and on the second in-stroke the mixture is compressed. Slightly in advance of inner dead center the charge is fired, by spark or other means, and on the second out-stroke the expansion of combustion gases takes place, furnishing the power.

As in the two cycle type, compression is limited by the danger of pre-ignition, that is, ignition too far in advance of center, and compression rises very rapidly at instant of explosion. Pressures in cylinder have, therefore, about the same limits as in the two-cycle type, though it is possible to so adjust the stroke as to reduce terminal pressure almost to that of the atmosphere, this being the main advantage of the long stroke engines now coming into general use for high speed work.

The four-cycle gas or gasoline engine may, in small sizes, be run at a very high speed, thus getting a large power output per unit of displacement and weight. It is also very flexible, where properly designed, but this flexibility is gained at the expense of efficiency, when the throttling type of governor is used, the efficiency percentage falling off very rapidly below full load. Where the so-called "hit or miss" system is used, that is, where the fuel is cut out from enough strokes to hold down the speed at part load, the efficiency is much higher, but speed regulation is seriously impaired, a great drawback in electrical or similar work requiring steady power delivery at a variable load.

The cycle of operations of the four-stroke injection or combustion type is generally similar to that of the four-stroke explosion engine. Starting at the same point as above, the exhaust valve opens, and the burned gases are discharged during an entire in-stroke. At inner dead center the exhaust valve closes and inlet opens, but on the out-stroke the cylinder is filled, by aspiration, with pure air instead of with explosive mixture. At outer center the inlet valve closes, and on the second in-stroke this air is compressed to any desired extent. As there is no fuel in the cylinder up to this time, pre-ignition is impossible, and so there is no limit, other than that of strength of materials, to degree of compression, which in practice is usually carried to several hundred pounds to the square inch.

At about the point where, in the four-stroke gas engine, ignition would take place, the fuel is injected in the form of a spray, either from a nozzle, or carried in a jet of air at higher pressure than that existing in the cylinder at this time. As the compression of the charge of air in the cylinder heats it to a very high temperature, much above the ignition point of even a very heavy oil, the oil is ignited and burned as it enters the cylinder, but not, as in the gas engine, with a sudden rise in pressure. This sudden rise is avoided by injecting the oil slowly, so that as the piston recedes on the out-stroke the increase in volume of gas due to combustion is offset by the increased clearance between piston and cylinder head, and thus a practically constant pressure is maintained up to the point where injection ceases. From this point the pressure falls by expansion to about atmospheric pressure at the end of the stroke, where the exhaust valve opens. It will be noted that the conditions during expansion or power stroke on engines of this type follow closely those in the cylinder of a steam engine, the fuel injection period on these engines corresponding to admission period in the steam engine, both being followed by expansion to the atmospheric line, while as in the steam engine, cut-off point may be varied to meet varying demands for power.

When we consider the requirements of power plant operation, the reasons for the remarkably favorable showing made by engines of the Diesel type as compared with any other form of prime mover are at once apparent.

Eliminating the question of first cost, which will in most cases be about the same for the oil engine as for the gas engine, somewhat less than for gas engine with producer plant, and very materially less than for a properly equipped steam plant of the same power, the desiderata in selecting a power generating set may be briefly grouped as follows:

Use of the lowest priced fuel.

Most efficient use of this fuel.

Maintenance of this efficiency over the widest possible range of local conditions.

Most perfect regulation—that is, maintenance of constant speed over a wide load range.

Reduction or elimination of stand-by losses.

Reduction of maintenance costs.

Reduction of operating costs.

So far as unit cost of fuel is concerned, the steam plant necessarily stands at the head of the list, for it will handle any fuel which may be burned, and to secure equal or greater economy with any other type of plant the percentage efficiency must be enough greater to overbalance the difference in first cost. In the case of the Diesel type engine as used locally the difference to be overcome is small, as there is but little margin as between theheavy distillate used in this type of engine and the crude oil used in steam plants. As compared with gas engines using producer gas, the difference in favor of the gas plant is slightly greater, the cost per ton of bituminous coal being slightly less, as a rule, than that of oil. The cost of heavy distillate is of course very much less than that of even the lowest grade of gasoline or naptha, and indeed such engines are not seriously considered for large units, their use being restricted to the numerous small plants where convenience is more important than fuel cost. In certain cases, as where blast furnace, coke oven or natural gases are used, the older types of gas engine without producer are available, but such conditions are rare, and as a rule the gas engine proper is barred for large plants by reason of excessive fuel cost.

(To be Continued)

OIL PRODUCTION OF THE UNITED STATES IN 1911
OIL PRODUCTION IN CALIFORNIA IN 1911

General Review of Petroleum Situation of Country, as shown by Dr. David T. Day, of the United States Geological Survey

INCREASE IN OIL PRODUCTION

Total Output of Nearly 220 Million Barrels Reported for 1911 by United States Geological Survey

The production of petroleum in 1911 increased slightly over the record breaking figures of 1910; moreover the industry assumed a steadier condition, owing to the absence of the very disturbing incidents of 1910, such as the bringing in of the Lakeview gusher and other great wells in California. The trade had also accustomed itself to the unusual wells in the Caddo oil field of Louisiana. The following table gives a comparison of the final figures of the United States Geological Survey for 1910 and the estimated output for 1911.

Production of Petroleum in 1910 and 1911

	1910 Barrels.	1911 Barrels.
Appalachian field	31,985,515	28,000,000
California	73,010,560	83,000,000
Kansas and Oklahoma	53,157,486	70,000,000
Louisiana	6,841,395	10,000,000
Texas	8,869,266	9,000,000
Miscellaneous	35,661,926	37,000,000
	209,556,048	217,000,000

The most striking feature of the year in the petroleum industry was the development of the Electra oil field in northern Texas.

The total production for the United States is between 215,000,000 and 220,000,000 barrels. The gain in a single State—California—was greater than the net gain shown for the country as a whole, the usual decline in the older districts offsetting the increase in the Middle West and South. Once more the refining interests and marketers of fuel oils, etc., have by strenuous efforts almost compensated the increased production by bringing about an increase in consumption. There is no longer much doubt that a plentiful oil supply will be afforded for many years; rather, the general feeling expressed by the question, "Where will oil break out next?" is a disturbing element.

Improved Foreign Market Conditions

A valued feature in the work of finding use for the great output is the restoration of a better market condition abroad. The exports have increased very satisfactorily. Another outlet is due to the general recognition of the fact that asphaltic oils, which have been a drug on the market, make the best surfacing material for macadam roads

The petroleum trade as a whole has suffered of late from two antagonistic conditions. First, there has been an oversupply due to the sudden development of great fields first in one part of the country and then in another until confidence became shaken as to the possibility of maintaining a satisfactory price. This condition has had an unfavorable effect on production in the older settled districts which have passed the gusher stage and yet are capable with fair prices of maintaining a reasonable output for many years. Second, the trade has been constantly handicapped by the fear lest the big producing districts should wane as rapidly as the yhave waxed, and leave a supply far below the capacity of the huge industrial plants designed to utilize such veritable floods of oil as have characterized late years.

For two years, however, discoveries of oil fields of great size have followed one another so closely that doubt has become conviction that the supply is abundant for years. It can not be denied that the quality of geologic deduction has so changed for the better, thanks to more exact and intelligent field investigations, that the geologist's estimates of the oil resources are now more than generally accepted by the oil producers and users. The common expression "Oil is everywhere" is a daily exaggeration of the idea that the oil supply may be depended upon.

Growing Substitution of Oil for Coal.

For just about a year the oil trade has been developing under this new conviction of a sufficient oil supply which has especially affected the consumer. The tendency to substitute oil for coal in many industrial establishments is growing rapidly. It is further encouraged by the possibilities of still greater economies by burning oil in internal combustion engines. Its advantages long known in the manufacture of fine glass are being heeded. It has been adopted by the navy and its use increases on the railroads. Oil is being taken seriously.

During the year stocks in general have declined except in California. In the Appalachian field and in the Mid Continent field they remained stationary. In Illinois there are about 21 million barrels in storage compared with 27 million in 1910. The stock on the Pacific Coast is estimated at 40 million barrels compared with only 7½ million barrels at the close of 1910. In neither year is account taken of such producers' stored oil as has not been sold or even carefully measured but is chiefly contained in open reservoirs.

General Rise in Prices

In the Appalachian field the pipe line price of $1.30 adopted has prevailed steadily throughout the year, at the end of which the price of oil of Pennsylvania grade was raised from $1.30 to $1.35 a barrel. This is the first advance in price since March, 1907. In Illinois the changes have been as follows: At the beginning of 1911 60 cents a barrel was paid for light oil and 52 cents for heavy oil. Light oil was raised on May 2 to 63 cents and on June 1 to 66 cents. The heavy oil was raised to 55 cents on May 2.

The Mid Continent field began the year with oil at 42 cents a barrel and on January 2 the price was raised to 44 cents. On May 2 this was changed to 46 cents, on June 14 to 48 cents, and on September 15 to 50 cents.

In alifornia the prices were held at 30 to 5 cents, according to quality, with higher prices for oils near the Los Angeles market.

Improvements in Methods of Operation

In oil-well drilling the most significant advance has been in the increased popularity of the rotary drilling method and its adoption, with modifications, in regions where the "standard rig" had prevailed, especially in California. The modifications include, chiefly, the installation of costly but efficient combination rigs where the plant contains a complete system of standard tools and even its own engine and boiler equipment and also a complete rotary rig. Another modification consists in the use of certain patent rotary bits for drilling through very hard, flinty lime stones, cements, etc. As a last resort these are all temporarily set aside by the standard rig, especially when bowlders are encountered.

In oil storage large concrete reservoirs have found favor in California. In transportation the use of rifled pipes and the practice of heating thick oils while pumping have been extended with good results.

Better Refining Methods

The improvement in manufacturing processes tends in the direction, first, of heat conservation, by preheating the oils by the waste heat of the vapors in the condensation tanks; second, of the distillation of crude oils clear to coke without transferring the residue or tar to special stills; and third, of "topping" or "skimming" oils to take off the gasoline or gasoline and kerosene from crudes which are used chiefly as fuel oils. A tendency is also evident toward obtaining larger yields of gasoline and the light products from crude oils by partial cracking processes.

Gasoline from Natural Gas

The production of gasoline from natural gas has made rapid strides and the process is evidently successful when applied to most natural gas from oil wells. An interesting development has been the extraction of oils of low boiling point from wells by attaching a vacuum pump to the well casing and causing the oil to distill out with the gas. It is condensed again at the atmospheric pressure. The gasoline thus obtained is, of course, heavier and more valuable for general use than the lighter products.

Increased Oil Exports in 1911

Greatly improved conditions in the export trade of all petroleum products characterized the year 1911, in remarkable contrast to the depression in 1910.

According to the Bureau of Statistics of the Department of Commerce and Labor, the exports of crude oils increased from about 165,000,000 gallons for the first eleven months of 1910 to 183,000,000 gallons for the corresponding period of 1911; of naphthas from about 92,000,000 to over 130,000,000 gallons; of illuminating oil from 861,000,000 to 1,025,000,000 gallons; of lubricating oils from 150,000,000 to 164,000,000 gallons; and of residuum from 113,000,000 to 125,000,000 gallons.

For every product the exports in the first eleven months of 1911 not only increased over those of 1910 but even exceeded the quantities exported in the twelve months of 1909, before the decline took place.

Prices for exported products, which had declined to extremely low points, recovered rapidly, especially in the later part of 1911, and though they wer not as good as in earlier years, the total values were greater than in 1910 or even in 1909.

Marked Increase in Imports

Since oils were put on the free list imports of crude oil and certain products have become a feature of the United States trade, especially crude oil from Mexico imported into Texas and Louisiana ports. In 1911 the Bureau of Statistics for the first time chronicled the importation of gasoline, 7,639,125 gallons being imported, principally from the Dutch East Indies. In 1909 the importation of other oils, chiefly crude oil from Mexico, amounted to 3,831,295 gallons in the first eleven months In the corresponding period in 1910 such importations had increased almost sevenfold; that is, to 23,924,571 gallons, and in the first eleven months of 1911 they had increased again to 48,216,167 gallons, worth $1,040,544

CALIFORNIA HAS HEAVY OIL PRODUCTION

The petroleum production of California in 1911 is estimated by David T. Day, of the United States Geological Survey, as reaching a possible 83,000,000 barrels.

At the close of 1910 oil was being produced in California at an average rate greater than during 1909. This increase continued and the total production for the year 1911 was between 80,000,000 and 83,000,000 barrels, compared with 73,010,560 barrels in 1910. While the consumption also increased, production continued to exceed the demand, stocks increased to about 40,000,000 barrels, and prices receded to 30 cents a barrel where they were not governed by long-time contracts, although higher prices ruled for refining oils. The increased production was chiefly from the Sunset and McKittrick region, from the pools already developed in 1910. Three significant discoveries during the year were (1) evidences of a large field in La Habra Valley; (2) the discovery of a deep oil sand in the Midway field containing a heavier oil than in the higher zones; and (3) the discovery at the end of the year in the

Coalinga field of a zone of light oil 1500 feet below the main producing beds, in a lower geologic formation. The probability of this last mentioned discovery had been pointed out in the reports of the Coalinga district published by the United States Geological Survey in 1908 and again in 1910.

The Lake View gusher collapsed at the end of 1910. In the later part of March the Associated Oil Company drilled in Section 13, T. 3, R. 10, in LaHabra Valley, three miles from the old Fullerton field and in line with the developments in the Coyote Hills. Oil was found at 3360 feet, and the wells started at 600 barrels a day. This caused such activity in the region and such favorable results that in June the Fullerton field, including the new developments, was producing about half a million barrels monthly. The oil sands seem thick and the wells promise to be persistent producers. The Standard Oil Company promptly connected the field by pipe-lines to its tank station at Wortham and by the end of the year completed the connection to the new refinery at El Segundo, th work on which began during the year. The refinery was practically completed by the end of December and will begin in the first part of January with a capacity of 5000 barrels a day, to be rapidly increased. The Associated Oil Company drilled a test well in the Elk Hills, San Joaquin Valley, in Section 30, T. 30, R. 24, and obtained a small production, thus proving the oil-bearing character of these hills, as has been predicted by the Government geologists. The oil was found at a depth of more than 3000 feet and proved to be of 28 degrees B., an unusually high gravity.

Important discoveries were made by drilling along the border of the San Joaquin Valley to the east and northeast of the McKittrick field, in the Belridge and Lost Hills fields, resulting in considerable extension of the possible productive territory.

Interesting developments were also made in the Cat Canyon field. On November 25th the Union Oil Company obtained a 3600-barrel well of high-gravity oil. Transportation facilities in the California fields were increased by the line of the Associated Oil Company from Canarez Station to the Lost Hills.

Larger Oil Consumption

While there was the expected accumulation of stocks, it is important to note the considerable increases in consumption, important features of which were contracts with Arizona smelters for 60,000 barrels a month, which were made at the beginning of the year. In October the Canadian Pacific Railway was buying 20,000 barrels a month for use in terminal yards and on the steamers plying to the north. It is said to be the plan of this railway eventually to use oil only for its passenger service as far as Kamloops, B. C. The year proved strenuous for the Independent Producers' Agency, and after many methods for relieving the situation had been suggested the association agreed to a plan for providing 10,000,000 barrels of storage, and at the end of the year contracts for building this storage had been made.

Inasmuch as the consumption has been increased beyond what was deemed probable at the beginning of the year, it can not be considered that the critical conditions existing in California in 1911 have been entirely without permanent benefit to the trade, which has now reached a positnon where the addition of even one or two large steamship companies to the ranks of oil burners, or equivalent consumption in other directions, would make the demand equal the present production. It is not too much to expect that unless a great increase in production takes place in 1912 the increase of manufactures and of domestic consumption will reduce the accumulated stocks.

DIRECTOR OF GEOLOGICAL SURVEY URGES OIL LEGISLATION.

In the thirty-second annual report of the Director of the United States Geological Survey, Dr. George Otis' Smith made the following statement, urging new legislation:

The most urgent need of legislation for the disposition of mineral deposits is in the case of oil and gas. It is most apparent that the placer law, which is none too well adapted to meet modern conditions in mining placer gold, is wholly inadequate if applied to public oil lands, inasmuch as oil is discovered at a late stage in the exploration and development of the land claimed under the law. Thus, large expenditures, extending over several months, if not years, are necessary before any right is acquired against the Government, and during all this time there is no legal protection of the oil prospector against unscrupulous claimants or competitors better backed by capital. The need for remedial oil legislation is somewhat less pressing than it was a year ago, by reason of the passage of the act approved March 2, 1911, the effect of which is to validate a class of claims which, although clouded by the construction which the department was forced to place upon the misfit placer law under which title to oil lands must now be gained, were bona fide in that the inception of their development antedated the oil-land withdrawals.

The need for a better law is, however, imperative, and the legislative action demanded by the situation should not be limited to an attempt to revamp the general placer law, but should consist of the enactment of an altogether new measure, especially adapted to provide for the sane and equitable development of this industry in the future.

OIL LANDS WITHDRAWN FROM ENTRY

Pending the enactment of legislation for properly disposing of oil and gas deposits on the public domain, and because it seems desirable to retain certain of these deposits for use as fuel by the American navy, all public lands known or thought to contain valuable deposits of oil or gas are withdrawn from all forms of disposal.

During the fiscal year 1910-1911, on the recommendation of the United States Geological Survey, 640,604 acres of possible oil land in California and Wyoming were withdrawn from entry ,and 1,232,719 acres in the same States, shown by field examination to be non-oil land, were restored. All oil lands in Alaska, comprising an unknown area, were withdrawn during the year. In the early part of the year the outstanding withdrawals, which had been made by the Secretary of the Interior, were ratified, confirmed, and continued in full force and effect by the President under the act of June 25, 1910.

ASPHALT IN 1910

The commercial production of asphalt in the United States in 1910 was 260,080 short tons valued at $3,080,067. Imports of asphalt in 1910 were valued at $785,963 as against $633,205 in 1909. The exports for the fiscal year 1910 were valued at $702,520, as against $425,420 and $451,968, respectively. Of the total production in 1910, California produced 143,468 short tons valued at $1,338,736. California's production was therefore, about 60 per cent, of that of the entire country. The Geological Survey Report says: The greatest increase was in the production of asphaltic road oil, which rose from 128,861 in 1909 to 159,424 short tons in 1910. This product was worth $2,207,937, as against $1,558,463 in 1909, which shows an advance in price as well as quantity, indicating active demand.

The combined gold and silver production of California in 1911 was valued at $21,811,022, of which sum the gold value is given as $20,310,987 and the silver as $1,500,035. Thus, even with oil at the low level of thirty cents per barrel for by far the vaster amount of the output sold, the California oil industry displays a much greater value than the combined gold and silver industries.

NAMES OF RAILROADS USING FUEL OIL IN 1910
(From the U. S. Geological Survey)

The following are the names of the railroad companies which used fuel oil on their lines in 1910:

The Sunset lines of California, Texas and Louisiana, embracing the Southern Pacific Company (Pacific system, excluding the Sonora Railway), the Oregon Railroad and Navigation Co., the Oregon Short Line Railroad, the Galveston, Harrisburg and San Antonio Railway Company, the Texas & New Orleans Railroad Company, the Houston and Texas Central Railroad Co., the Houston & Shreveport Railroad, and the Louisiana & Western Railroad; the Frisco lines, including the St. Louis & San Francisco Railroad Company in Missouri, Kansas, Texas and Oklahoma, the St. Louis, San Francisco & Texas Railroad, and the St. Louis, Brownsville & Mexico Railway in Texas; the Chicago, Rock Island & Pacific Railway in Kansas and Oklahoma; the Atchison, Topeka & Santa Fe Railway; the Kansas City Southern Railway in Texas and Louisiana; the International & Great Northern Railroad Company in Texas; the San Pedro, Los Angeles & Salt Lake Railroad; the Trinity & Brazos Valley Railway Company in Texas; the Galveston, Houston & Henderson Railroad in Texas; the Santonio & Arkansas Pass Railway Co. in Texas; the Texas Pacific Railway Co. in Texas; the Chicago & Northwestern Railway Co. in Wyoming; the Northern Pacific Railway Co., between Seattle and Tacoma, in Washington; the Great Northern Railway Co. (engines and oil motor car); the Chicago, Milwaukee & Puget Sound Railway Co.; the Tonopah & Goldfield Railroad Co., in Nevada; and the New York Central & Hudson River Railroad in the Adirondacks, New York.

And still there are those who cannot see that oil is here to stay, that it not only is displacing coal o nthe railroads but that it will shortly be the only fuel used on the great liners; finally, that the oil industry of the entire fuel oil producing country is assured a profitable market for every ounce of oil that can be produced at a good price unless all the producers want to sell all the oil under the ground at the same time and to the same people in other words, unless they glut the market.

Napthalene in Road Tars

A short treatise on Napthaline in Road Tars, by Prevest Hubbard and Clifton N. Draper, chemist and assistant chemist, respectively, of the office of Public Roads, has been issued by the United States Department of Agriculture, and will be of undoubted interest to road oil experts. The effect of napthaline upon the consistency of refined tars is explained in a brief manner "without thechemistry of the substance," which is discussed in a later publication. The physical properties of napthaline receive, however, careful consideration, and the use of napthaline in tars is declared advisable to a certain extent. This treatise is known as Circular No. 96 of the Department of Agriculture.

WYOMING OIL NOTES

C. E. Jamison, State Geologist of Wyoming, has sent us "Bulletin 2, Series B," a volume dealing with the geology and mineral resources of a portion of Fremont County, Wyoming. This volume contains valuable matter on the oil resources of the south central portion of the county before named, in which are situated the Dallas or Popo Agie field, the Plunkett field, also known as the Lander district, and the Sage Creek field, formerly called the "Little Wind River" district. The volume is very interesting.

Oil has been found in three different sections of land in the Dallas field, and in at least one section, in both the remaining fields. Oil saturated shales, sandstone and gypsum are found in a large number of places tributary to the proven districts. The oil in the Dallas and Sage Creek fields found thus far is a heavy brown oil of an asphaltic base, differing entirely from that of the Plunkett field, which is olive green by reflected, and red by transmitted light, and of paraffin base. The first attempt at developing the Dallas field was made in 1880 although oil had been known to exist in the region for more than forty years previous.

In 1880 a well thirty-nine feet was digged and drilled and oil was encountered; this well produced two barrels of oil per day. Later wells were drilled 300, 500 and 800 feet, respectively and it was reported that each of them flowed 200 barrels. This report was not susceptible of proof or disproof but it is believed that the statement was an exaggerated one. In 1897 four wells were drilled in the Dallas field and three of them actually made 200 barrels per day each while the fourth produced water, gas and oil, being thus of little value. There are about forty wells in the field now and seventeen of them will produce on the pumps. The oil of the Dallas field ranges from 22.2 to 24 degrees Beaume. It is said to be similar in composition to Ohio oil.

In the Plunkett field only one well has been drilled into oil and is a producer. Its output is approximately thirty barrels per day. In the three fields there is storage for 67,350 barrels of oil. There are two pipe-lines of six and four-inch capacity, respectively. There are about fifteen operating companies whose operations have resulted as follows: In all the fields combined there are nineteen producing wells, six drilling wells and twenty-six abandoned holes. Little judgment has been exercised in very many cases, in the selection of a site and it is inferred that drilling has been done largely by those unfamiliar with the business. The best fuel oil territory lies in the Sage Creek field. The productiveness of the territory is still to be determined. We might add that the bulletin leaves us confused in some instances as to which field is under discussion by the author. Aside from this it is interesting and informative reading.

Consolidated Midway Oil Company has re-organized. It is now the National Pacific Oil Company, organized under the laws of California. Under the Arizona incorporation the stock was non-assessable—under the new incorporation it will doubtless be assessed immediately because the Consolidated was in debt to the extent of approximately $175,000. Consolidated has a contract for a large amount of oil.

GENERAL NOTES FROM VARIOUS SOURCES

Livermore Valley Operations

An earnest, honest and capable attempt is being made by the people of the Livermore Valley to find out exactly what they have in their district in the shape of an oil field. These operations are being carried out without any splurge, any attempt at stock jobbing, and with the one idea in view of obtaining wells which will prove up the district and will benefit the Livermore Valley in proportion. They are largely home financed although Oakland capital is largely interested in one company and Boston money in another. The names of the companies now operating in the Livermore district, which is located in the foothills a few miles to the southeast of the city of Livermore, are, the Independence Oil Company, the W. M. & S. Oil Company, and the Livermore-Boston Oil Company; the old Alisal Oil Company, which actually got the oil is not operating at present, but has by no means gone out of existence.

It is not only the fact that the Alisal people got oil that causes the new companies to expect a production worthy of their efforts; it is the fact that there are seepages innumerable, that tunnels have been dug into which the oil has flowed, and that several expert and well qualified oil operators have stated that in their opinion a light oil field exists in the valley where the developments are now under way. But the Alisal well is the most potent reason for developments at the present time. While the Alisal is not now operating they have, nevertheless, proved the district to be oil producing and to be possessed of at least two oil-bearing strata, and further, have proved that the oil is of a very high grade and probably six times the value of the average fuel oil produced in California at its present prices.

The Alisal Oil Company got a well which was capable of producing ten barrels per day at the lowest and twenty-five barrels daily at the highest estimate, had they stopped where the oil was struck, at 540 feet; instead of this, not being satisfied with the showing, they attempted to get a deeper hole, but after going past 700 feet their rig gave way. The oil that the Alisal Company got was higher than 40 degrees in gravity; and no oil produced in the Livermore field has tested less than 36 degrees, while some of it has tested as high as 46 degrees. While the Alisal had to quit operating in the early part of 1911, their results were sufficient to encourage the Independence Oil Company, the W. M. & S. Oil Company and the Livermore-Boston Oil Company to commence operations which, it is hoped and believd, will rsult in obtaining good wells by all companies.

The Independence Oil ompany have an ideal, standard 6-inch rig operating and have been going since Thanksgiving of 1911; they have 36,000 gallons of fuel oil stored on their lease with which to operate and 2000 feet of well casing, the largest being of 15 and one-half inch size and 70 pounds weight. To date they have gone down about 325 feet; they are going to oil, as they have secured the backing and have the necessary supplies on the ground. The company is working twenty-four hour shifts. The 15½-inch casing is soon to be landed and the well continued with 12½-inch.

The W. M. & S. Oil Company is not drilling at the present time as they are engaged in pulling the present casing to replace it with newer and heavier material. Experimenced drillers are in charge. Two large tanks are to be erected soon for the oil which the company expects to strike. The Livermore-Boston Oil Company now has its timber and operations will be begun as soon as the rig can be built and materials hauled to the lease; machinery and tools have already been purchased so that once the project is under way there will be no delays. The Livermore-Boston expects to begin operating about April 1st, on the Renso property in Section 21.

Of the practical operators not at present financially interested, J. E. Gray, the well-known Bakersfield oil man, is probably the mostly quoted on what he believes Livermore capable of. Mr. Gray states that he believes an oil field will be developed in Livermore and that the present time is, of course, thebest occasion to try to produce refining oil, as there is fuel oil "to burn."

That the district is being taken seriously by the outside world is evidenced by the fact that when the receiver of the defunct California Safe and Trust Company proposed the sale of all the assets of the company for the shareholders, the directors of the depositors association declared against the sale because 4700 acres of land located at and surrounding Tesla, held by the receiver of the bank, might possibly be oil land, which would make it far more valuable. This "Tesla" land is not far removed from the scene of the operations of the Independence and other oil companies, and it is evident that the directors of the Depositors Association have pinned their hopes of higher returns from the property on the outcome of the operations of the various companies.

There are approximately 4000 people employed in the Midway oil field.

BRITISH CONS. IN RECEIVERS HANDS

The British Consolidated Oil Corporation, Ltd., which controlls among other properties the Gipsy, Mountain Girl, in Midway, and the Wabash and other Coalinga properties, passed into the hands of a receiver, November 17th last. S. P. Childs, of London, was the receiver appointed; he is now in Coalinga. He has sold the Gipsy and Mountain Girl properties to the Indian & Colonial Development Company, now in possession of and operating them. The cause of receivership was assigned as inability to raise money to meet deferred payments. The properties were contracted for before the market slump. The holders of the company's bonds suffer the largest loss. L. P. Guiberson is the new company's general manager in California. The present yield of the Midway properties is 30,000 barrels per month. It is said that the Indian & Colonial Development Company is backed by some of the largest capitalists of London.

E. L. Doheny, president of Mexican Petroleum Company, and Huasteca Petroleum Company, has gone abroad to inspect three tank steamers now being constructed on the river Clyde. The three steamers will cost $1,000,000 and will be capable of transporting 60,000,—5,000 and 35,000 barrels, respectively the greatest of the vessels to cost $250,000. The Doheny Companies are preparing to transport a tremendous quantity of oil from Mexico to New York and other American ports and in all probability to European ports in the early future.

AGENCY MATTERS

The Independent Oil Producers' Agency feels confident that it will soon close its financial plans for the permanent storing of 10,000,000 barrels of oil for the trade after the opening of the Panama canal. This plan will take that much oil out of the market. With the 22,000,000 barrels of oil in the tanks and reservoirs of the Standard Oil Company, this will leave such a small surplus of stock on hand that the over production cry will soon be a thing of the past. The storage matter will be acted upon by the Agency at the first meeting, which will take place in the early future. TheAgency handled 60 per cent of the production of 1911, according to one report. The average price received for oil sold is said to be in excess of 33 cents. Lately a number of old-time contracts at low prices, have expired. The renewal of these at better prices brightens the Agency's outlook.

At the Producers' Transportation Company's tank farm three miles south of San Luis Obispo, the monster concrete oil reservoir, of 1,250,000 barrels capacity, is now almost completed and oil will soon be flowing into it at the rate of from 35,000 to 40,000 barrels per day. This great tank is 600 feet long and 320 feet wide. It is made in the strongest possible manner. The tank farm now contains thirty-six tanks with capacities ranging from 50,000 to 1,250,000 barrels; thirty-two of them being 55,000-barrels capacity, each. In the early future a pumping station will be erected, with power sufficient to force the oil to Port San Luis through a pipe line shortly to be constructed. This will afford direct ocean shipping facilities. The Producers' Transportation Company is not saying much but is doing a great deal.

The United States Bureau of Mines is conducting a technical inquiry into the manner of producing and handling petroleum as it is done in this State, and for this purpose V. R. Garfias, a well-known geologist associated with Ralph Arnold, accompanied by W. F. Durrand, head of the mechnical engineering department of Stanford University, has been looking over the Kern County fields, escorted by W. A. Williams, chief geologist for the Associated Oil Company.

Recently an appropriation was obtained by the Bureau of Mines for the purpose of gathering reliable data and publishing a bulletin that would deal with the methods of recovering, storing and transporting petroleum.

This necessarily will have to do with the mechanical phase of the business. No reference whatever is to be made to the geological or chemical features.

The title to approximately 6000 acres of valuable oil lands in California is attacked by a suit filed in the United States Circuit Court in San Francisco, intended to affect the Southern Pacific's land grant of July 26, 1866, and June 28, 1870. The suit specifically is for the possession of 160 acres of land known as the Carden Oil mining claim, situated in Fresno County, which was take upossession of in June, 1909, by William Carden, Chester Moore, E. A. Potter, A. F. Mitchell, Herman Geisner, Thomas Young, J. J. Scott and L. H. Tobey, title to which they claim, subject, however, to the paramount title of the government.

The complainants assert that these lands are purely "mineral" lands and that the Southern Pacific never had either physical or construction possession of these. While the suit refers specifically to the Fresno County land, the suit involves all the proven oil land which the Southern Pacific claims as its own, secured through land grants. The question as to whether or not oil land is "mineral" land is the real question to be decided under the law. But the obvious question is: Would Congress Have Intentionally Given the Public Lands Known to Contain Oil, and therefore of very great value, to the corporation?

Amalgamated's Well No. 1, in La Habra Valley, came in at 4000 barrels a day. Amalgamated is a subsidiary of the Associated Oil Co.

Messrs. Barneson, Victor Etienne, Jr., Frank W. Griffin, N. A. Fuller and Daniel Murphy have formed the "Northern California Securities Company," with a capital of $1,000,000, divided into 100,000 shares, all of which has been subscribed. The company is formed for the purpose of dealing in stocks, bonds and collateral, and will, doubtless, be useful in financing oil corporations in which the incorporators are interested.

JEWELL'S SPECIAL MEETING

At the special meeting of the Jewell Oil Company's shareholders, held December 13, 1911, the following new officers of the company were elected: President, T. B. Neel, Gilroy; vice-president, Ernest Scholze, Del Monte; treasurer, Levi Hawley, San Francisco; serretary, Argyll Campbell; Dr. H. O. F. Menton completes the directorate. The meeting developed considerable animation and acrimony, especially when it was found that the company had never owned any treasury stock which was the reason there was no money in the treasury wherewith to pay its bills and develop its property to any considerable extent.

The new officers conducted an investigation of the company's affairs and recommended that all those who have not paid their assessment should do so. They sent out a circular stating the affairs of the company were in bad shape but could be righted. The company's thirty acres of land is **excellent territory**—what the company needs is a most careful and economical management. The new officers have done away entirely with their salaries. Further information later.

GREAT WEST OIL COMPANY GETS OIL

The Great West Oil Company, operating in Tapo Canyon, Ventura County, has got a good well at 1050 feet deep, with a splendid refining oil—light gravity. While the well is capable of producing twenty five barrels daily at the present time, the company will not complete it now, but will carry it down further, with the expectation of getting a 100-barrel producer. This oil is very light. The Great West Oil Company is located on the same anticline with the Monte-Bello wells. It appears as though the Great West has an excellent bit of territory. Mr. William Moore is at the head of the company.

The Bell Ridge Oil Company has purchased the 30,000 acres of oil land and prospective oil properties which mention was made of some time since in the "Derrick," from Emily D. Hopkins, at a price not known to the "Derrick." The lands are known as the "Hopkin's estate" and lie between the Lost Hills and McKittrick oil fields, covering the major part of four townships.

President Taft has withdrawn 2700 acres of some of the best prospective oil territory in Kern County, a considerable amount of which was being held by various companies which were not developing but were believed to be holding the property for speculation. The land lies west and adjoins the highly developed Sunset oil district. It is presumed in advance that resort to law will be made by some of the holders.

CALIFORNIA DERRICK

The Oil Authority of the Pacific Coast

Published Monthly

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The Death of Admiral Evans

The death on January 3 of Rear Admiral R. D. Evans was a severe shock to the entire country which he had served so long, so faithfully and so well. It was the privilege of the editor of this magazine to have met and to some slight degree to have known this great character, whose lease of life was cancelled so short a time since by the Grim Reaper. For this reason we express a greater degree of regret than would otherwise have been the case.

Admiral Evans was known to the country for his service in the United States navy. To oil men he was known principally because he accepted the presidency of the California Consolidated Oil Company.

Aside from the shock to the entire country which the death of the well beloved Admiral entailed, the fortunes of a great many people of small means are considerably affected thereby. The Admiral, in his speech on the 16th of October, 1911, explained how it had come to pass that there had been such a widespread sale of the shares; it was thought advisable to appeal directly to the people to finance the California Consolidated Oil Company. There were more than 2,100 shareholders at the time of the last shareholders meeting. All these shareholders are, of course, more interested in the Admiral's death than would otherwise be the case. As yet no successor to the Admiral's position has been chosen, and we know of no steps taken thus far to reassure the many shareholders. What the company's future can be, if firm and decisive action is not taken, is problematical from our point of view, but we hesitate in voicing a belief that as good and honorable a man can be secured as president, as the one who no longer guides the company's destinies. If it were possible, we would like to see some such man as Col. Timothy Spellacy at the company's head; that would assure its success. As the Yellowstone Oil Company has levied an assessment of five cents per share we anticipate that the Consolidated will be forced to do the same, because the latter company owns 520,000 shares of Yellowstone. It looks as though the Yellowstone directors had only waited Admiral Evans' death to jump on the Company. Another matter of regrettable concern is that with the Admiral's death, H. W. Wack, counsel for the Company, severed his connection in that capacity. Surely a strong hand is needed in control in the present crisis. The "Derrick" hopes that the strong character will be found.

All the new war vessels of the United States navy will burn **oil exculsively,** beginning with the Oklahoma and Nevada. Admiral Evan's foresight has proven itself once again. But the poor old Admiral could not live to enjoy the fruits of his knowledge.

"Burr Brothers," after robbing innumerable innocents and harming the name of California oil investments more than any other one set of fakers who ever operated a "bunco game" in the West, pleaded guilty and were sentenced to one year in prison each. The crime of it! A man who stole 20 cents the other day was given five years in San Quentin. Another who committed robbery in the South was sentenced to thirty-five years; but "Burr Brothers" received the light sentence of one year each after having swindled thousands of unsuspecting persons, many out of their little all. Is not this a terrible travesty on eternal justice? It merely recalls the old, old saying: "The bigger the thief, the smaller the penalty. '

According to the "Oil Bradstreet' the Union Oil Company of California has paid $25,320,943.00; but according to the "official quarterly statement of oil securities issued by the San Francisco Stock Exchange for the quarter ending Dec. 31, 1911, the Union has paid but $9,906,592.55, a discrepancy of $15,414,350.45. We would like to know what the Union has really paid. The San Francisco Stock Exchange ought to be reliable but we question it when the Oil Bradstreet says otherwise.

The British Government, to aid the oil development of New Zealand proposes to allow the free importation of oil well machinery into that country. In California, owing to the beneficence of nature, oil men are congratulating themselves on the fact that the president has withdrawn sufficient government land from entry to curtail the wastful and wicked overproduction of our oil resources. The difference in the two policies of the two governments is as great as the difference in the oil resources of the two countries.

STILL FOREMOST

In making the acknowledgments which are always tendered to publications or persons who have been of value to them or aided in their work, the United States Geological Survey again names the California Derrick, while at the same time giving due credit to other publications of value. Following the introduction to the excellent report on the petroleum industry of the United States in 1910 issued by the United States Geological Survey, Dr. David T. Day devotes the following graceful paragraph to "acknowledgments":

Acknowledgments

It is a pleasure to refer again to the hearty co-operation of the petroleum producers of the country from whom one set of production statistics has been obtained, and of the pipe-line and other transportation agencies from whose statistics a separate statement has been prepared. The agreement between the results of these two different methods will become closer each year.

In addition, gratful acknowledgment is made of the valuable information furnished by State and other geologists, refining companies, and the technical press—especially the Oil City Derrick, whose field reports have been accepted as authoritative; the Independence Daily Reporter; the Oil and Gas Journal, of St. Louis, whose field reports are accepted for Texas and Louisiana; the Oil, Paint, and Drug Reporter; the Petroleum Gazette; the California Derrick; the California Oil World; the Moniteur du Petrol Roumain; and the Petroleum Review, of London.

The statistics of production in Illinois, Kansas, and Kentucky were collected from the producers by a co-operative canvass with the State geologists.

This little courtesy shows that the California Derrick continues to maintain its standard of excellence for which it has received previous acknowledgments. We are glad to see that the Oil World is mentioned this year.

WITHDRAWN LANDS

Over one and one-half million acres of Government lands have been withdrawn from entry by the settler for possible water power development purposes. Oil lands are shown by this to be by no means the only class of withdrawn acreage, not to speak of the coal-bearing and other classes of territory.

OUR EASTERN REPRESENTATIVE

We are pleased to announce that Mr. M. H. Bell, Room 10, Freeman Block, Portsmouth, New Hampshire, represents the "California Derrick" in the East.

Mr. Bell is not only the "Derrick's" representative, but is a personal friend of the "Derrick's" owner. Any courtesies extended to Mr. Bell will be greatly appreciated. Persons in the East desiring quick information might find it of decided advantage to write Mr. Bell instead of writing here direct. Mr. Bell is well acquainted with the California oil fields as he made a trip throughout the valley fields last spring in our company, and has investigated much on his own account. If anyone in the East wants an additional copy of the "Derrick" in a hurry, Mr. Bell can furnish it from now on.

All the principal foreign oil fields are decreasing in output. All big Eastern oil fields diminishing. California oil 30 cents per barrel! Sounds incongruous, doesn't it? It is incongruous.

New Article by Professor Cooper

Professor Cooper, our contributing scientific editor, has written the second papers on "Origin of Petroleum Oil and Natural Gas," entitled, "Primary Distillation in Nature." It will begin in the next number. Mr. Prutzman's Pinal-Dome Topping Plant descriptive article will be concluded in an early issue.

SPECIAL FIGURES FROM VARIOUS SURVEY BULLETINS OF INTEREST TO OIL PRODUCERS

The total production of zinc for the entire country during 1910 was valued at $27,267,732, or approximately eight million dollars less than California's oil production. The total value of the cement production of the entire country amounted to $68,205,800, which is not quite twice the value of California's crude oil although thecement business has taken tremendous strides of recent years and cement walks pave the streets of all the cities and towns in America, as well as other countries, while the use of cement in building has expanded to an extraordinary degree. If California liquid asphalt were to pave as many streets as cement is used upon for sidewalks, there would never again be a chance for the cry of over-production.

SUNSET-MIDWAY-McKITTRICK

Aside from the fact that the Midway Oil Field is the most extensive and prolific oil producing region known the points and developments of most general interest in the West Side districts since the last issue of the Derrick are first, the gas developments, by which is meant the fact that pipe has been ordered for the piping of Midway's gas to Los Angeles; second, the work on the California Pipe Line Transportation Company's projected line from Midway to the coast; third, the new gushers.

Midway Gas for Los Angeles

About the first of January gas circles in Los Angeles and oil and gas men generally were given a stiff jolt of surprise by the announcement in the press that pipe twelve inches in diameter and sufficient to construct a pipe line 125 miles long had been ordered of one of the big eastern tube companies and was shortly to be shipped to Taft and Los Angeles for the purpose of piping Midway's gas to the latter named city. The exact quantity of pipe ordered was given differently by different publications. Following this report came the petition of the Midway Gas Company, which is a newly formed subsidiary of the Southern California Gas ompany, to the Los Angeles County Supervisors for the privilege of building a gas pipe line from the property of the Honolulu Oil Company, in Buena Vista Hills, Kern County, (Midway Field) to Los Angeles, the same to be 12-inch, high pressure pipe. The Los Angeles "Times" states that 100 carloads of pipe, pumping machinery and other matrials necessary for the new project are now on the way west. The vast gas production of the Honolulu Oil Company is well known. Their great gushers in the Buena Vista Hills rival those of the Standard Oil Company in size and produce a more valuable gas, in that it is a "wet" product, which is refined, producing gasoline therefrom by use of Bessemer Gas Engine Compressors, which same have been described heretofore in this magazine. Not only this, as a fitting climax to the excellence of the Honolulu's gas, it is just as excellent fuel after the gasoline has been extracted as before, thus making it doubly valuable. The operations of the gasoline from gas plant will, therefore, be in no way interfered with. A big area of permanent gas bearing territory in the Buena Vista Hills has been proven and from what competent engineers say, the region is one which will last. The total expense of this enterprise will probably aproximate $2,500,000. The gas pipe will in all probability be laid directly as possible over the mountains from Taft by way of the Tejon pass ,through which surveys have already been made. The surveys have already been made. The natural gas will be piped into the mains of the Southern California Gas Company and distributed by that corporation. The Los Angeles "Times" states that $1,000,000 the proceeds of the sale of bonds, was recently received and deposited in Los Angeles banks by the Midway Gas Company and that this money will be used in defraying the expenses of construction. The fact that Standard Oil piped its gas from the Midway gassers to Bakersfield and local towns with utmost satisfaction was one of the strongest reasons assigned, for the conception of the new project. It is anticipated that the Los Angeles Gas & Electric corporation will fight the granting of the permit to the Midway Gas Company as it is conceded the former is interested in bringing natural gas from Santa Maria for consumption of its patrons—but in any event, Los Angeles appears destined to consume natural gas. It might be added that when this is the case there will be a considerable drop of oil consumption in the southern city.

The work on the pipe line project, now no longer a project but a going, material proposition, is perhaps, best described by the following condensed facts from an article in the Midway "Driller," the reliable West Side oil paper; it will be noted that the Guaranty Pipe Line project is taken over and the new concern is "in reality the old Guaranty Pipe Line Company rejuvenated:

Work on the most gigantic project ever commenced in this field was started this week when the first steps were taken to lay a transportation oil pipe line to the coast. The Guaranty Pipe Line Company had for months had the proposition in the air, but it never settled to earth, through no fault of the promoters. On every side they met with opposition from their competitive forces. Obstructions of every kind were placed in their path of progress until the idea was practically abandoned. A new organization has been formed which will be known as the California Pipe Line Company, in reality the old Guaranty Pipe Line Company rejuvenated, and English capital has been secured in the sum of one and a half million dollars, which will carry the plans and line of the new company from the Midway field to the coast and Los Angeles. The first installment of the English coin arrived here yesterday and has set the wheels of the great project in motion. Camps have been organized and the work of building wagon roads and telephone lines commenced. All rights of ways have been secured and there is apparently no reason why the work should not progress with great rapidity. The new line will be started from near the old United Crude Oil Company on Section 2, 11-24, and carried over the mountains to Santa Barbara, thence to Los Angeles. Eight-inch pipe will be laid, and it is estimated that at least five pumping stations will be installed three of which will be used to boost the oil over the mountains, the other two at points along the coast. The pipe line will parallel the telephone line and wagon road, which will have to be built before the pipe line, in order that the heavy material used in the construction of the latter can be placed. Santa Barbara County has signified its willingness to assist with the building of the wagon road through that county, and it is anticipated that other counties through which the line will pass will donate liberally to the building of the road, which will be graded the entire distance and will be an El Camino Real to the southern metropolis via the coast. Hundreds of men will be employed, in fact all the men available in this field will be put to work. Pipe line men are now being looked up in order that there will be no delay in the work. The main line will pass north of Taft, tapping the great production of the Midway field, and thence through McKittrick and from there direct to the coast. It is estimated that the line can be completed by the first of November, 1912. No expense will be spared to push it through with all possible expediency. Six-inch laterals will be run to various points not on the direct route of the main line.

Both Kern and Ventura counties have determined through their supervisors, to aid in building the highway to be constructed along the pipe line right of way—a tremendously valuable road and one which will thus be built partly by the two counties and partly by the pipe line company, so that the interest of both economy and progress will be served jointly. It is estimated that the full cost of the line will be $2,500,000.

The great gushers brought in with the dying year revived the days of 1910, when every month produced its quota of spouters. The Buick, Hale-McLeod and Edmonds Midway Oil Companies furnished the gusher delegation. Hale-McLeod Oil Company's well No. 8 ,Section 5, 32-23, Midway, broke loose suddenly and made 10,000 barrels daily for a time, of which amount 8000 barrels per day was saved. The well gushed and sanded several times. The oil is sold to the Standard Oil Company. From a spectacular point of view the Buick gusher, well No. 3, Section 3, 31-23, same district, holds the palm. It easily made 12,000 barrels daily and probably more, as 10,000 barrels was saved by the company. The oil, 23 degrees gravity, is sold to the Standard. The Edmonds Midway, Well No. 1 ,Section 32, 32-24, is another big producer, making 6000 barrels per day. This well, however, is under control. So is the Buick well, now, a Mortenson well capper having been successfully used to harness it. The Mortensen capper is described in another column of this magazine. The Mays Oil Company's gusher recently spouted, as did the Eagle Creek's Fellows gusher. The Buick's gusher threw the oil three times as high as the derrick. Further information concerning these companies follows: The Buick has cemented off the water in Well No. 1, on Section 32, 31-23. This well formerly was a star producer, making a steady 3000-barrel per day output, but some time back water broke in and finally the production was an emulsion of oil and mud, sand and water, so that the well appeared ruined. The oil output was but 25 per cent of the emulsion. Now that the water has been shut off, it is expected that the well will return to its former excellent condition. Hale-McLeod's gusher, No. 8 is now making a steady production of 1500 barrels per day. No. 7 has been cleaned out. No. 4 is about ready to produce. Nos. 9 and 10 are shortly to be commenced. The Hale-McLeod Company has declared a 10 per cent dividend, payable February 12th.

The North Midway Oil Company has filed suit against the Fortuna Oil Company to cancel its lease in Section 15, 31-32, alleging breach of contract and failure to drill.

The city of Taft is now receiving its water supply from the Consumers Water Co., which took over the entire equipment of the Taft Public Utilities Co. The new company is supplying a superior water at a greatly reduced rate. Good water is now plentiful in the West Side fields contiguous to Taft.

The Los Angeles Midway Oil Company, operating on Section 26, south of Taft, has a splendid showing of oil at 2300 feet and considerable gas pressure.

A good highway from Maricopa to McKittrick by way of Taft, well ballasted and graded and in as direct a line as possible, is being advocated in the oil towns and its advocacy is receiving a very favorable reception. A bond issue is suggested. Many oil companies and individual operators are strongly in favor of this action.

The Honolulu Oil Company has brought in another gusher, Well No. 2, on Section 4, 32-24. The well came in good for about 500 barrels daily flow of 27 degrees gravity oil. This is the first well completed in Section 4, 32-24.

Kazutaka Ito, chief of the Board of Inquiry of the Nippon Oil Company, is sojourning in California at present investigating American producing and refining methods. He has lately been through the West Side fields. The Nippon Oil Company is the largest Japanese oil company. (The Nippon Oil Company has taken the "Derrick" for three years).

The Midway Valley Oil Company has abandoned work in the Elk Hills, their well, known as the "Kinsey" well, having reached a depth of 4850 feet without favorable showings. No valuable sand was passed through and this would seem to demonstrate that Elk Hills is not a paying district. There is oil in Elk Hills but the depth is too great to make operations there profitable. The Midway Valley well was drilled with a rotary.

Oleum Development well on Section 15, 32-2[illegible] has cemented off at 2843 feet and is continuing operations.

News from this District Written by
W. D. MALTMAN

The year 1911 has shown a remarkable consistency of production for the Santa Maria field, the total number of barrels put on the market by it being practically the same as for the two years previous. The Union Oil Company has set a figure of 1,000,000 barrels from its properties of which amount nearly 500,000 barrels were produced by the Bell No. 5 well, recently brought in at 4000 barrels daily. Its success in the old field has also been exceptionally good, the Newlove No. 38, coming in at the rate of 1200 barrels daily, and the total production of these two wells has enlarged the gross amount materially. The other properties in the old field have remained about the same with the exception of the Rice Ranch, a small producer, which has doubled its production with a new 800 barrel well.

Cat Canyon has fallen off very noticably owing to the Palmer shutdown. The field has not increased the number of wells producing but had the Palmer held its own, with the Union Bell No. 5 flowing 4000 barrels, it can readily be seen the immense amount of fuel oil that would have been put o nthe market during the past year. This, too, would have resulted in bringing up the field's total production figures to the high water mark of its history, for it is estimated that the Palmer production was curtailed at 300,000 barrels.

In round figures, the production of the numerous properties during the past year may be estimated as follows: Union, 4,000,000 barrels; Western Union, 500,000 barrels; Dome, 360,000 barrels; Pinal, 300,000 barrels; Rice Ranch, 120,000 barrels; Brookshire, 210,000 barrels; Refining and Producing, 320,000 barrels; New Pennsylvania, 130,000 barrels, other small producers in the old field, 200,000 barrels and the Cat Canyon district, of which the Palmer is the chief contributor, about 1,300,000 barrels, making a total of 7,500,000 barrels which is a close estimate of the year's yield. (Editor's note: This figure is considerably in excess of our figures, shown on the frontispiece).

Nothing spectacular has occured in this field during the past year with the single exception of the big Bell well. Its longevity and volume tends to increase the wide-spread belief in the Cat Canyon territory. Only a year ago, the general conservative opinion was that the Palmer had struck a basin or pool of oil which did not extend beyond its boundaries; but the advent of this big well and the proof of oil on numerous other surrounding properties, has completely disqualified the opinion.

New wells are being drilled by the Union, Western Union, Rice Ranch and New Pennsylvania in the old field in an effort to get more of the high grade oil found there. The Union has its Newlove Nos. 39 and 40 close to No. 38, which proved such a success, and the Western Union is drilling Nos. 48 and 49 along the line close to Newlove No. 38, all of which wells have the best locations possible for a production. Rice Ranch is drilling No. 9 and like the above mentioned, it is close to a producer just brought in, ready for the test at this writing. New Pennsylvania has its rig standing to start No. 7. The site for this well is within a short distance of the famous No. 6 which is one of the best wells ever brought in in the oil field, being a consistent yielder for the past three years, the past two of which have evidenced no change in its volume. The wells will materially add to the productivity of the old field.

In Cat Canyon there are numerous wells in different stages of development. The Palmer wells have practically all been completed with the exception of No. 6 on the Blochman tract and are in shape to be opened up. The Union is content with its one big well and is not doing any further pushing. The Dome is likewise holding back, its present output being sufficient to fill its orders. The Santa Maria Oil Field, Ltd., will soon complete two wells and has one producing on the Rossi Tract, the production of which is to be converted into asphaltum as soon as the big plant is built on its property. The railroad is in full fledged traffic and the company will be an independent marketer as well as producer.

Ideal No. 4 is plugging the bottom of the hole with 50 feet of cement to shut off the water before again testing. Over 90 feet of highly saturated oil sand has been penetrated and as soon as properly shaped the well should become a big producer. The Dispatch, its near neighbor, is laboring under similar circumstances.

The Merchants and Summit wells are nearing completion. Both are due north of the Palmer and are likely prospects. The Merchants has entered the first oil sand at 2760 feet and is there landing the 8 inch. The Summit is 2430 feet with 6 inch.

East of the Palmer the New Pennsylvania is the center of attraction. This well has shown wonderful possibilities but as yet the well has not been successfully shaped up. It started a flow of 2500 barrels a day but sanded up owing to lack of gas pressure to throw off the heavy sand filling in. A method of overcoming this difficulty will be reached in time and the result will be an added gusher to the Cat Canyon string.

The Brooks is producing about 200 barrels daily on an average and the West about 100 barrels. Neither well has shown a change during the past several months.

The Gato Ridge has been temporarily shut down but John Bell No.1, operated by the same company, struck a high grade oil at 2160 feet. An effort was made to pump this but after proving the quantity to be too small, the hole was deepened and is now drilling.

The Carpenteria well is fighting sand and water troubles brought about by pulling the casing back and having an in-fill of water and sand.

The Princess is again putting down their well in the tract after having made a similar test to the John Bell well, light oil but not enough. On the Tunnell tract the drill has been idle for the past few weeks awaiting weather conditions.

The Santa Maria Midway, in the Tepesquet, has had a series of promising oil bearing formations, but is not ready to finish up.

The Bradley Canyon north of the Palmer about four miles, is splendidly equipped to begin drilling. This is a genuine wild cat project being beyond the limit of a previous test and will open up a big field of development if successful. The proximity to surfact indications is a strong factor in its favor.

GATHERING DATA

The Hopkins-Maltman Company are pleased to state that they have succeeded in financing the Cat Canyon Oil Company and that the drilling of their No. 1 well will be pushed forward as rapidly as possible. Within the past six months the Princess Oil Company and the Santa Maria Midway Oil Company, operating about two miles northeast of the Cat Canyon Oil Company, have penetrated the first oil sand, proving that the Cat Canyon field extends about three miles north of the Palmer Oil property and proving beyond a doubt that the Cat Canyon Oil Company's land is within the oil-bearing region.

The Princess Oil Company, operating the Muscio tract, about six miles southeast of the Palmer Stendel tract, have encountered a very high grade shale oil, the well has not been thoroughly tested as yet but this demonstrates the extension of the Cat Canyon field to the south.

Mr. W. H. Storms, the recently appointed State Mineralogist, is now collecting data relative to mineral production for 1911, as required by law. The result of this work, published in an annual report, helps greatly in advancing the varied mineral interests of the state. The greater part of the information required is obtained by corresponding with the owners and operators of mineral property. Many oil companies probably have received inquiry blanks from the State Mining Bureau regarding the output and progress of their work in the year 1911. Those who have received such are urged by the Mining Bureau, to answer them at once, and any who have only recently engaged in business, or who for any other reason are not on the lists of the State Mining Bureau, will be doing a public service by sending to the Statistician, State Mining Bureau, Ferry Building, San Francisco, Cal., their name and address, together with a statement of the amount and value of minerals they may have produced in 1911, or are now developing.

PATENTS RECENTLY GRANTED

The following patents recently granted of interest to the oil trade, are reported expressly for the California Derrick by J. M. Nesbit, Patent Attorney, Park Building, Pittsburg, Pa., from whom printed copies may be procured for 15 cents each:

Well drilling apparatus, Joseph Darling, Chicora, Pa., 1,011,324.

Stuffing box for polished rods for oil wells, F. H. Norris, Robinson, Ill., 1,011,236.

Reamer, Charles Sly, Corpus Christi, Tex., 1,011,384.

Method of cementing oil wells, A. A. Perkins and Edward Double, Los Angeles, Cal., assignors to Perkins Cementing Co., same place, 1,011 484.

Well casing spear, C. A. Rasmussen, Coalinga, Cal., 1,011,645.

Well drill, G. M. Kriebel, Garfield, Wash., 1,011,818.

Automatic fire protector for oil tanks, W. J. Donnell, Kiefer, Okla., 1,011,927.

Pipe coupling, Wm. Glasgow, Ontario, Cal., 1,012,073.

Combined drill bit and under-reamer, R. E. Korts, Wellsville, N. Y., 1,012,563.

Driven well spar or point, Jacob Sharp, Philadelphia, Pa., 1,012,727.

Heating apparatus for oil wells, W. B. Wigle, Santa Maria, Cal., 1,012,777.

Temper screw, J. J. Dixon and J. J. Goddard, Warren, Pa., 1,012,994.

Portable derrick, T. G. Schweiser, Davis, Cal., 1,012,921.

Calf wheel for oil wells, W. A. Greer and D. L. Turner, Coalinga, Cal., 1,013,012.

Oil well pump, E. A. Wheeler, Bakersfield, Cal., 1,013,246.

Method of and apparatus for treating asphaltic oils for the production of asphalt and the recovery of lighter products, F. H. Dunham, Santa Paula, Cal., 1,013,283.

The News from This Field is Written By
GUY H. SALISBURY—California's Best Known Oil Correspondent

1912 Opens Auspiciously

The passing of the year 1911 marks the closing of a period which was replete with struggles; its surplus of crude made the ever anxious operator ask more pointed questions concerning the situation than ever will be answered.

The opening of the new year is full of promise, as from the past we have gained knowledge with which we hope to meet the future; but, for many, the increase in consumption has been shadowed over by the surplus, until they were so blinded from constant looking through pessimistic lenses that all courage had left them.

To the man who looks beyond the shadows, drawing wisdom from the past, the situation has improved and will continue to improve. Should Congress in its wisdom legislate in favor of stimulating the development of the great West, the promise of 1912 will be greater prosperity for the years to come; and great empires, filled with happy, prosperous people, will spring up through the West, and the armies of unemployed will find plenty of work for willing hands. Thus is the writing on the wall interpreted. (Mr. Salisbury is hostile to the "Leasing System.)

Important Statistics

As we pass over the local work done about this field we must bear in mind the fact that 1911 was a "surplus year," that many properties were temporarily closed down, awaiting the moving of oil out of the field. Following are some very interesting statistics:

The various pipe lines and the Southern Pacific moved out of this field 18,521,499 barrels of oil during the year.

The amount of fuel oil consumed in the field, for boiler purposes, is estimated to be not less than 831,456 barrels, an average of 69,288 barrels per month, the total production for the Coalinga field for the year amounted to 18,580,333 barrels, being about one-fourth of the entire production of the State.

The production for December was 1,621,384 barrels, being within a few hundred barrels as large a production as any one month in the history of this field.

The average daily production for the year was approximately 50,700 barrels per day.

This is a splendid showing, when we consider the handicap the field had for several months during the early part of the year.

New Storage and Storage Figures

A matter of interest is the new storage built during the year. The earth reservoir on the southeast quarter of Section 7, 20-15, built by the Southern Pacific about seven years ago, and dismantled about three years ago, has been "made over," greatly improved; the sides and bottom were trimmed up and cemented, being reinforced concrete with six-inch mesh No. 9 wire on the bottom. The sides are reinforced with the six-inch and also with metal lath. The capacity of this concrete reservoir is estimated at 500,000 barrels. It was built by the Kern Trading and Oil Company to store oil for the Southern Pacific.

On Section 9, 20-15, the Associated Oil Company have built two earth-concrete reservoirs, each reinforced on sides and bottom with six-inch No. 9 wire mesh; each rservoir is estimated by the engineer to hold 750,000 barrels of oil.

The lease storage of the field is held in sumps, wood and steel.

The capacity of the sumps holes are given as 1,220,800 barrels; in wood, 38,600 barrels, and in steel 154,570 barrels; total storage for 1911, 1,414,970 barrels.

The tank farm of the Producers Transportation Company, on the south of town, has 1,460,000 barrels steel storage.

The Associated, on Section 36, 20-14, built two 37,000-barrel steel storage tanks; capacity, 74,000 barrels; this, together with the three large concrete storage reservoirs built by the Kern Trading and Oil Company and Associated Oil Company, with 2,000,000-barrel capacity, adds 2,074,000 barrels of new storage to the field for 1912.

Important Developments

The strike made by the Canadian-Coalinga, on Section 8, 21-15, a short distance from Coalinga on the south side of Wartham Creek, has opened up a light oil field, and one that indicates to be a gusher field.

The well entered the top of the oil sand at 2839 feet. The manager, John Thompson, decided to test this sand before drilling deeper, and, after considerable trouble in controlling the gas pressure, a fine well was secured. The well has produced at the rate of 3000 barrels per day, for thirty-six hours through an inch pipe, the gas pressure being estimated to be fully 1500 pounds per square inch. The gravity of the oil tests at 29.5 degrees Beaume.

This strike has encouraged all property owners in the north end of the south filed; much inquiry has been made for oil lands and a few sales made. The new development brings in other properties lying nearby; the Coalinga Gateway are geting ready to complete the well started by the Coalinga Consolidated; the Esperanza Land and Oil Company have built a standard rig on Section 13, 20-14; The Best Yet Oil Company, on Section 18, 21-15, have brushed up their property, looking to complete their well. The Blair Oil Company, on Section 14, 21-15, are having good indications for a well. Further south the work has not progressed as favorably.

Most Important Strike of the Year

The most important strike of the year is in the east side field, that made by the Standard Oil Company, on Section 28, 19-15. Here their Well No. 80, on the north line near the center of thesection, went through about 1600 feet of brown shale alternating with shells and sand, and entered a light oil sand with a decided paraffin base; the oil is 34.6 degrees Beaume. If the area is as large as many oil men predict it to be, it will be one of the greatest discoveries made in oil on the Pacific Coast, and will add materially to the wealth of this field. The well is a little less than 2600 feet deep. No. 80 is making from 100 to 250 barrels per day, pumping by heads, a strong gas pressure assisting the well to produce.

There are a number of wells drilled into the brown shale, from 300 to 400 feet, but none ventured through the brown shale for fear of bottom water. This strike proves up two sections for the California Oilfields, Limited, Sections 21 and 29, and has added largely to the value of a number of lesser companies on the east side.

The Shallow Field

Another interesting strike made during the year is that on Section 2, 21-14. T. H. Thompson, geologist, after examining the formation very thoroughly, was convinced that there was oil at a shallow depth; interesting some Berkeley capital to join in with him he opened up a shallow field, wells 300 to 350 feet deep are flowing from 20 to 60 barrels per day, oil 20 degrees Beaume, with a very larg prcentage of fine lubricating qualities. The Berkeley-Coalinga was the first company to commence operations; they now have three wells; the Spokane-Coalinga came next in line; now have their third well completed. The Washington Oil Company has two wells completed. Greve & Phelps have two wells completed. The Coalinga Roadway Oil Company have forty acres that will soon be drilled. The wells are cheaply drilled and very easy to care for. One water string and one oil string of casing is all that is required. There is considerable new work contemplated in this new shallow field. The Standard will soon have its pipe-line connected with this development.

Lost Hills Excitement Not Felt in Coalinga

The Lost Hills excitement has quieted down as far as Coalinga is concerned, the operations that are being conducted by Coalinga oil men moving along without any flury, hardly noticeable with the men in this field. The work about the Kettleman Hills has in great part been shut down for the present time.

The Prospect Optimistic

The year just closed leaves this field in a better condition than many expected.

The many companies that were burdened with overflowing sump holes have in most every case moved their oil, or have constructed steel storage tanks to care for the oil.

The field has an increased storage of 2,074,000 barrels over last year.

The strike made by the Canadian-Coalinga, the opening of the new shallow field on Section 2, 21-14, just west of town and the strike made by the Standard on Section 28, 19-15, have all done much to give an improved tone to all business.

The spirit of the Coalinga operators is buoyant as the outlook for the year 1912 gives promise of a better price for oil at the well, and of a more stable condition than the past has known. The many inquiries for good properties by men who represent "interests" have done much to encourage the better feeling that now prevails: The feeling that 1912 will be a highly prosperous year is very general in Coalinga.

COALINGA—DEVELOPMENTS OF MONTH

Kern Trading and Oil Company

The Kern Trading and Oil Company has again become active in its operations in this field. On Section 7, 20-15, the southeast quarter, there are six locations on the east side, two on the north line and two on the south line, in all, eight strings of tools running. On Section 19, 20-15, they have four strings of standard tools and one string of rotary tools running. In spite of the government suit against the Southern Pacific Company, to be filed within a few days, in which these lands are involved, the work of development goes steadily along. The presumption is that the government will recognize as equity of the subsidiary company, the Kern Trading and Oil Company, the drilling company of the Southern Pacific, should the Government win in this contention. From preliminary work done on the southeast quarter of Section 7, 21 15, by the Kern Trading and Oil Company, it would appear that the company proposes to develop that quarter, to drill a well to offset the big well of the Canadian-Coalinga on Section 8, 21-15. The southeast quarter of Section 7, 21-15, is one of the mineral locations of the United Development Company, who are contesting with the Southern Pacific for the mineral rights. The probabilities are that both companies will soon be drilling on thi squarter section. There is also a report current that the American Oil fields, Limited, will soon commence operations on Section 35, 20-14, along the shallow territory proven by the development work of the Berkeley-Coalinga on Section 2, 21-14, as the sand croppings extend northwesterly through Section 35, 20-14; this report lacks confirmation, but the oil sand crops through that section and recent investigations and examinations made by parties known to be in the employ of the American Oilfields, Limited, have been seen going over the property, which lends color to the report.

Coalinga Men in Burmah

Thomas Hays, of the Burmah Oil Company, Limited, has forwarded twenty-three men, all told, from the Coalinga field to Upper Burmah as drillers ,production men and machinists. From a report received from Ray F. Holser, the fieldman in Burmah, the men have all made good. The greater majority of the men are contented with their situations and the country; one man has sent for his wife, having made arrangements at Rangoon for her residence until suitable quarters ca nbe had in the field. "Al" Quein is expected back soon, having resigned his position as tool-boss; one other man has resigned and will return. Mr. Holser reports all the men are enjoying good health.

Blair Oil Company

In the Blair Oil Company's well on Section 14, 21-15, the heavy six and five-eighth inch California special casing was landed last week at 4307 feet and the black sulphur water-sand cemented off. The 6⅝-inch was carried past the shoe of the 8¼-inch about 1347 feet. Manager John Hendrickson reports that the log tallys with the formation in the Valley well drilled on the southwest quarter of Section 32, 20-15, just west of town. The black sulphur water-sand overlies the oil formation o nthe west side field and this fact encourages the men on the Blair well, who expect within the next one hundred feet or less to enter a pay sand.

Fuel Consumption in Fields for Drilling, Etc.

The fuel oil consumed in this field under the boilers has been estimated as 69,288 barrels per month for the year of 1911; a total for the entire year of 831,456 barrels. This is added to the production in the grand total for the year, which was 18,580,333 barrels. The average consumption of fuel oil used per day per boiler on a drilling well will run from four barrels to sixteen barrels, according to the depth of the hole and whether a circulator i srun, as the latter requires from three to six barrels per day, but if operated by a battery of boilers the average per well is cut down.

The big land purchase undertaken by the people known as the "Hammond Syndicate," has developed somewhat as a move towards a settlement with some of the companies has been made recently, in the form of a substantial payment on account of the purchase. This, together with other considerations, has induced the several parties in interest to extend the final payment to July 1, 1912, when it is reasonably expected the deal will be completed. Taking in consideration the payment made, pending legislation will be suspended until that date by the companies in this part of the deal.

The Agency's Runs

The Agency has run from 42 per cent. to as high as 97 per cent. per month of all oil produced on the properties of the Agency members during 1911. A carefully compiled table of runs and shipments made by the Agency has been kept by Secretary H. W. Dallas for the Coalinga field. The prospects for 1912 are fully as encouraging, and with increased storage capacity for the proper care of the oil of the field the situation will be handled with greater ease than ever before.

United Development Company

In the United Development Company's well No. 1, on Section 17, 20-15, the 15½-inch screw pipe casing has been landed at 764 feet and the 12½-inch will now be put in. The formation has improved; the 12½-inch casing will be carried to about 1500 feet, or more, as the territory will be about 3000 feet in depth, according to the hole of the Coalinga Security well on the north.

Coalinga's Big Shipments During 1911

The amount of oil shipped out of this field for 1911 by the five pipe lines leading to tide-water, amounted to 17,958,499 barrels; there was shipped out over the Southern Pacific railroad 563,000 barrels, making a total shipment of 18,521,499 barrels of oil moved from this field during 1911.

The Southern Pacific land cases involving 400,000 acres of oil land in the Kern County fields have been continued by Judge Welborn in the Federal Court until May 27th for the Government and for the defendant, Southern Pacific, until the latter part of July.

Judge Welborn announced that he would not rule on any controverted motion for a continuance of other processes in these three cases, although acting upon those points affected by stipulation.—Midway Driller.

THE CANADIAN-COALINGA GUSHER

The gusher of the Canadian Coalinga Oil Company, on Section 8, 21-15, that has made a number of spectacular flows, has been successfully harnessed in by the use of a Mortenson well capper.

The well started to flow on January 11th, after a bridge was drilled through; then the Mortenson well capper was clamped on the casing, and as soon as the tools were run out the "cut-off" valve was screwed into place. There are two openings under the cut-off to relieve the pressure on the cut-off valve, should the pipe be lifted by the gas pressure; one of these openings was "bushed down" to one inch. Through this opening the gas and oil rushed, being forced out by a 1500 pound pressure, as estimated by A. J. Pollak, the engineer for the Canadian-Coalinga. The estimated production was about 3000 barrels per day for the thirty-six hours of that run.

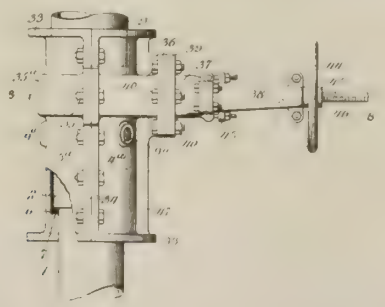
The object of reducing the opening to one inch was to smother the well, thus holding back the sand, as the force of gas, oil and sand would soon cut the couplings and the casing; as it was, the force of oil and gas carrying a very little sand cut out the "bushing" allowing the flow to increase; however, the well soon sanded up, which has given the men a chance to replace with heavier bushing that which was worn away, and to place a heavy steel nozzle for the oil to run through.

The impression is gaining ground that the south field will develop into a gusher field. The old Commercial well, that was drilled in on Section 12, 21-14, about one and one-quarter mile due west on the formation, came in a gusher and went wild, soon plugging herself.

The oil of the Canadian-Coalinga is 29.5 dgrees (Beaume), gravity and the quality indicates an excellent oil for refining purposes, which will no doubt go to the Standard Oil Company.

Mortenson Well Capper a Valuable Device

The knowledge of knowing how to handle these gushers is very important, and the manager, John Thompson, has demonstrated the utility of the Mortenson well capper on his well, which was given a severe test and a successful one. The capper is very easily adjusted over the casing, as shown by the accompanying cut. The cut-off valve is made of hardened steel three



inches thick, and is very quickly screwed in place. The two openings under the cut-off valve are to relieve the pressure when desired; above the cut-off can be placed what couplings are required to operate the well. This appliance is the invention of a Coalinga man, A. C. Mortenson, the patent being held by the Mortenson Well Capper Company, and the cappers being manufactured in Coalinga.

(Continued from Sunset-Midway-McKittrick.)

The Equitable Oil Company has a good well on Section 10, 32-23. The oil is of 22 degrees gravity and was struck at about 2840 feet depth. When brought in the flow was good for about 1000 barrels per day.

The Rico Oil Co., on Section 25, 32-23, is operating only two wells at present. The Rico is delivering to the Standard Oil Company on a 100,000-barrel contract. When oil conditions improve the Rico will operate more wells.

The Alberta Midway Oil Co., operating a lease from the Bear Creek Oil Co., on Section 14, 31-22, has built two new rigs and is preparing to start the tools downward as soon as possible.

The Esperanza Oil Company south of Taft, has installed a 20-horse-power electric motor which is now in use and will be used for pumping and drilling.

The Engineers Oil Company, Section 14, 31-32, has completed No. 2 well at 1815 feet. It is flowing 350 barrels per day. Material for rig No. 3 is on the ground and drilling will be started soon.

Mt. Diablo, on the North American property, south of Taft, brought in a well, No. 38, just recently. The well was put down to a depth of 1000 feet in two weeks. It will make less than 100 barrels a day.

The North American Oil Company, on Mt. Diablo lease, has shut down and will not resume work for five months. Work was suspended on account of the Standard pipe line being unable to handle the production which was 37 tanks a month with a capacity of 12,000 barrels to the tank. No more work will be done until the production can be handled.

TERSE DEVELOPMENT NOTES

Dome Oil Company, Section 23, 31-22, has completed Well No. 4 and is drilling No. 5. The Stockton-Midway is drilling No. 3. The La Belle is preparing to drill No. 2. The Midway Five Oil Company's No. 3 well is on the beam and producing 500 barrels daily. The Associated's No. 2 well, 32, 31-23, passed through the productive sand and went to 4000 feet. Now the well is being finished at a shallower depth. Midway Syndicate's well on Section 4, 32-23, has struck a big flow of water. An attempt to shut off same is being made. The Olig Crude is making good progress in No. 3 on Section 32, 31-23. Honolulu Consolidated is running a number of strings in Section 31, 31-23. It is said the Associated will soon resume work on the deep Elk Hills well which got oil. Eagle Creek, Section 31, 31-23, Well No. 5, is down about 1600 feet. The Kern Trading & Oil Company has ordered fifty 50-barrel and four 100-barrel galvanized tanks constructed in Taft. The K. T. & O. will soon have twelve rigs at work near Fellows. The Santa Fe is said to be preparing for large development work in the Midway district. The Standard is going to run eight strings of tools on the flat east of Taft. The Indian & Colonial Development Company, the British concern which recently took over the Gipsy and Mountain Girl, is now running one string of tools and will soon start a second. Work will be continued from now on. The Standard has struck a fine flow of oil in their well on Section 30, 31-23; depth, 2800 feet.

The Esperanza Oil Company is running three strings of tools on Section 32, 32-23. More rigs are being erected. The San Francisco-Midway Oil Co., Section 25, 32-23, has ceased to exist; was dissolved by court order. The S. F. Midway, on Section 24, 31-22, another and distinct corporation, is continuing operations. The two were recently confused. The Santa Fe will rock-ballast the railroad to the West Side fields and put on a swifter schedule. Heavier rails will also be used. The Kern Valley Bank, which was closed because of the depreciation in value of the Sunset Road Oil Company's bonds, of which the bank held a large amount, is soon to distribute from $200,000 to $250,000 to the depositors, according to a reliable report. While the exact amount is not known, it is conceded that 3,250,000 is a close estimate. Eagle Creek Oil Company will resume drilling operations immediately. Eagle Creek recently held the annual shareholder's meeting, at which time Capt. F. N. Schofield was re-elected president; C. J. Berry, vice-president; R. W. Kinney, treasurer; W. H. Cooley, secretary. Eagle Creek enjoyed a prosperous 1911. The North American Consolidated Oil Company has 100 wells on production in the Midway field. Pyramid Oil Company's North Midway Well No. 1 is now about 000 feet deep and nothing but gas. They expect oil soon. Midway Valley Company drilled 1850 feet in Elk Hills and quit.

INTERESTING BRIEFS

The Pinal Oil Company [illegible] has changed its financial outlook from debt aggregating $120,000 in January, 1911, to $13,000 in cash and $14,000 receivable at thesame time in 1912. Secretary's report Pinal has paid close to $1,000,000 dividends.

Illinois Crude is again on the upward trend as far as share prices are concerned. And with reason—a much greater amount of their production is being taken by the Agency, cash being received and accumulated for dividends in the near future.

The Four Oil Company resumed dividends in November and declared again in December 1 per cent per month.

The Elk Home Oil Company has sold 150,000 barrels to the Standard at 30 cents per barrel.

The Ventura Oil Development Company, which has been merged with the Seaboard Oil & Transit Co., were very successful with both assessments.

The Mascot Oil Company continues to pay dividends regularly—sometimes one, sometimes two and even three per cent per month. Mascot has a contract for all the oil it will produce during 1912 with the Standard Oil Company.

Messrs. Martin and Dudley, having "cleaned up" big fortunes each in the Lost Hills, through their discovery and development of that district, are now dissociating their interests—each worth, it is said, at least $1,000,000. Business judgment, combined with determination, made their fortunes.

Dr. C. E. Hailstone, the well-known oil man of Los Angeles, has been visiting in the East. While there he expounded the doctrine of California oil most ably to those interested. The Doctor visited Portsmouth, N. H., where he received a royal welcome from the stockholders of the Elk Horn Oil Company. The Doctor enjoyed himself immensely.

S. W. and B. Oil Co., Section 6, 20-15, Coalinga, is making increased shipments of oil. It is expected that S. W. and B. will soon pay dividends.

Standard Oil Developments of Recent Date

The matter as to whom the contract for supplying 250,000 barrels of oil to the Harbor Commissioners of San Francisco for use around the Ferry building in San Francisco, was recently decided by the Standard Oil Company being awarded the contract. The Standards well on the Yriarte Ranch at Fullerton is now in the oil sand, and looks like a big well. The Standard has signed up the production of the Montebello Oil Company's entire production of light oil. The Montebello is located near Bardsdale, in Ventura County and opened up the well called the "Montebello" (H. J. Jory described this district and the formations in Ventura County fully in 1910 in the "Derrick"). Besides signing up the Montebello Oil Company various other companies have contracted with the Standard, among them being the following: Hale-McLeod Oil Co., Pioneer-Midway Oil Co., M. G. & P. Oil Co., Elk Horn Oil Co., Tight Wad Oil Co. It is stated that the Standard will construct still another 12 inch pipe line from either Waits or Kern River to Pt. Richmond in order to handle the great surplus now on hand. In the mean time it has been given out that the company will no longer take the utmost amount of oil which the producing companies can turn over to them, but will accept only a certain proportion on the various contracts until such a time as there is a greater demand.

LATEST QUOTATIONS ON THE SAN FRANCISCO STOCK EXCHANGE

Oil shares are still in small demand by the public at large and prices have by no means recovered from their low condition of the past ten or twelve months. Many companies listed on San Francisco Exchange are practically off the board, as the owners will not dispose at present prices; for many others there is no demand. Following is a list of quotations on the shares of such companies as have shown recent activity:

Company	Bid	Asked
Amalgamated Oil	63 00	..
Apollo	....	....
Associated Oil Stock	44 25	44 50
California Midway	10	....
Caribou	1 25	1 35
Claremont	76	83
Coalinga Mohawk	40	....
Coalinga National	13	....
Dominion	....	1 00
Empire	1 05	1 25
Enos	05	10
Gypsy	....	25
Illinois Crude	12	14
Junction	....	27
Maricopa National	16	....
Mascot	....	95
McKittrick	09	....
Midway Premier	27	35
Monte Cristo	....	1 10
Nevada Midway	....	20
New Penn. Petroleum	....	50
Occidental	20	..
Pacific States Petroleum	20	..
Palmer	74	75
Palmer Union	....	10
Peerless	....	4 50
Pinal	3 50	..
Premier	43	..
Republic	35	37
Rice Ranch	1 00	1 25
Sovereign	....	15
S. W. & B.	....	24
Sunset Monarch	50	1 00
Turner	1 00	1 10
United Oil	44	..
Union	98 25	99 00
W. K. Oil Company	....	2 50
Yellowstone	....	06

LOS ANGELES QUOTATIONS

As usual, Los Angeles displays more interest in oil than does San Francisco. Trading is brisker and prices generally a little better Following are the latest Los Angeles quotations:

Company	Bid	Asked
Amalgamated Oil	59 50	60 00
American Crude Oil Company	09	..
American Petroleum Company (Preferred)	48 00	75 00
American Petroleum Company (common)	36 50	41 00
Associated Oil	43 37	13 75
Bear Creek Oil & M. Company	....	75
Brookshire Oil Company	54.	..
California Midway Oil Company	12¼	12½
Central	1 93	....
Columbia	1 10	1 15
Consolidated Midway Oil Company	2¼	2½
Continantal Oil Company	....	30
Enos Oil Company	....	12½
Euclid Oil Company	....	37½
Fullerton Oil	....	4.00
Globe	5½	..
Maricopa Queen Oil Company	10½	..
Mascot Oil Company	....	95
Mexican Petroleum, Ltd. (Preferred)	88 75	..
Mexican Petroleum, Ltd. (Common)	55 00	55 25
New Pennsylvania Petroleum Company	....	62
Olanda Land Company (Oil)	....	45
Palmer Oil Company	7¼	..
Pennsylvania Midway Oil Company	07	..
Pinal Oil Company	....	7 00
Rice Ranch Oil Company	99½	..
Trader's Oil Company	76 50	78 00
Union	98 50	..
Union Provident Company	98 00	..
United Oil Company	36¾	39
Western Union	100 00	..
Non-Producers		
Nevada-Midway Oil Company	12	..
Oleum Development Company	2¾	03

JANUARY 1912 AND DECEMBER 1911 DIVIDENDS

Following is the list of companies paying dividends during the month of December, 1911, giving rate of dividend and amount paid by each company. Next to the Union Oil Company, the largest distribution was made by the Buick Oil Company, an unlisted company which was violently attacked as a "fake" proposition some months back. This shows that "you can't always sometimes tell." The Buick is not listed on the exchanges. The Central Oil Company, Imperial, Monte Cristo, Mountain Girl, Union Provident and W. K. Oil Companies all made heavy payments. It is conceded, however, that the Buick's showing is the most amazing:

Company.	Per Cent.	Amount.
Amalgamated	$1.00	$ 50,000.00
*Buick	.04	127,252.16
Caribou	.025	8,070.30
Central	.015	15,400.00
Claremont	.015	7,500.00
Columbia	.01	9,992.26
Euclid	.005	1,750.00
Four	.01	3,000.00
Fullerton	.05	30,000.00
Gipsy	.10	50,000.00
Home	.01	7,500.00
Homestake	.01	1,000.00
Imperial	.006	60,000.00
Mascot	.01	5,000.00
Monte Cristo	.05	25,000.00
*Mount Diablo	.02	10,000.00
Mountain Girl	.07	24,500.00
New Pennsylvania	.015	2,500.00
Paraffine	.01	3,000.00
Rice Ranch	.01	3,000.00
Sauer Dough	.02	4,000.00
Section 25	25	10,000.00
*State Consolidated	.005	5,000.00
Traders	.006	9,000.00
Union	.006	183,387.60
Union Provident	.006	90,767 93
United Petroleum	.006	48,450 60
Western Union	.005	10,000.00
W. K.	.03	15,000.00
Total California Co.'s		$820,069 95
Mex. Pet., Ltd., pfd.	.002-3	80,000.00
Grand total		$900,069 95

*Unlisted.

The total payment to the end of 1911 by all companies listed on the San Francisco Stock Exchange was $40,233,374.13 Total dividends paid by all listed companies during 1911 amounted to $2,835,097.21. Dividends by outside companies would doubtless swell the total 50 per cent.

JANUARY DISTRIBUTION

Following is the list of companies which paid dividends during January, the percentage and amount paid:

Company.	Per Cent.	Amount.
Caribou	025	$ 8,070 30
Central	015	15,400.00
Claremont	.015	7,500.00
Columbia	01	9,992.26
Continental	.01	2,500.00
Fullerton	.05	30,000 00
Globe	01	6,000 00
Home	.01	7,500 00
Homestake	01	1,000 00
Mascot	01	5,000.00
Monte Cristo	05	25,000 00
*Mount Diablo	.01	10,000 00
New Pennslyvania	.005	5,000 00
Olinda Land	.01	10 000.00
Paraffine	01	3,000.00
Rice Ranch	.015	4,500.00
Record	.01	10,000.00
Sauer Dough	.02	4,000.00
Section 25	25	10,000.00
*State Consolidated	.005	5,000.00
Traders	.006	9,000.00
Union	006	183 387 60
Union Provident	006	90,767.03
United Petroleum	.006	48,450.60
Western Union		10,000.00
W. K.		15,000 00
Total California Co.'s		$506,067.79
Mex. Pet., Ltd., pfd.	002-3	80,000.00
Grand total		$586,067.79

Unlisted.

We have no information about—Sidney Heald Oil Co., Section Six Oil Co., Overland Oil Co., Sovereign Oil Co., Templor Ranch Oil Co., all of which we have been asked about recently.

Peerless Oil Co., operating in Kern River field, has installed a 1950-pound air compressor operated by a 450-h.p. gas engine, operated in turn by gas from the company's wells—economy!

W. P. Hammond, of San Francisco, is being sued by the De Luxe Oil Company for failure to pay $180,000 as the purchase price of the company's Coalinga property and $14,000 operating expenses charged to Hammond because he told the company to operate at his expense, for which he would settle later. When he refused to settle, says the complaint, suit was instituted. Mr. Hammond was representing an "English syndicate."

The total production of lime in the United States for 1910 was valued at $13,894,962, which is about two-fifths the value of California's oil production.

The values of the oil production of other States and countries as compared with California's for the year just under discussion, have already received the attention of Dr. David T. Day and are published in another column.

Foreign Notes

Peru uses petroleum as fuel on nearly all railways and some of the steamships of the country, having very large fields. Both high and low grade petroleums are produced and only a small part of the known territory has been developed. During 1910 the crude oil production was 175,000 metric tons. The kerosene for the same period totalled 1,050,000 gallons; gasoline and benzine, 155,000 gallons.

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Illustration for Prof. A. S. Cooper's Article "Origin of Petroleum Oil and Natural Gas."

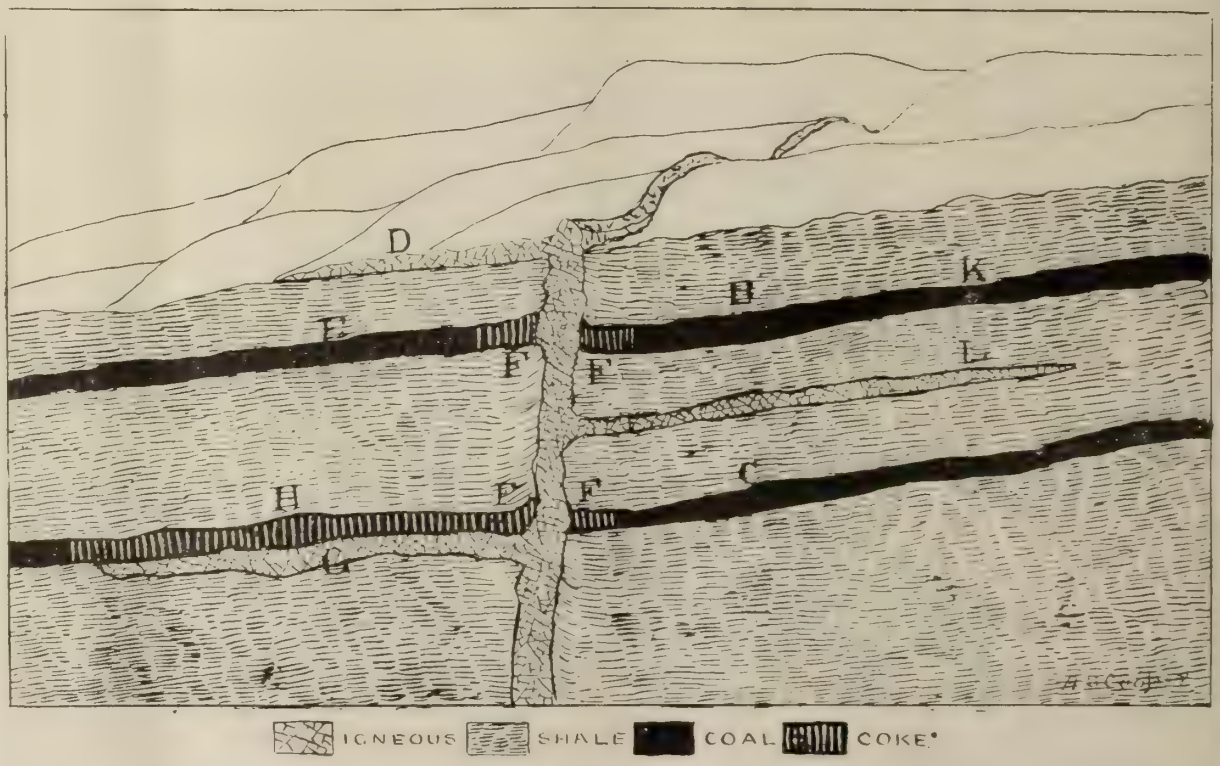

Figure 1

(See Opposite Page)

CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 4 SAN FRANCISCO, CAL., FEBRUARY, 1912. No 8

Primary Distillation in Nature

The Origin of Petroleum Oil and Natural Gas

By A. S. COOPER, E. M., Ex-State Mineralogist of California; Contributing Scientific Editor of the California Derrick

Second Paper in Series

The knowledge of the origin of petroleum oil and natural gas is of great importance. If it is the product of the distillation of bituminous and carbonaceous matter by the heat of volcanism and metamorphism or the chemical action of volcanism, wells can be drilled to the places of such generation, with a liability, if other conditions are favorable, of getting oil or gas; but if indigenous to certain strata there would be but little inducement to drill a well below these strata.

Petroleum oil and natural gas are found in strata where no local composition or contents, except petroleum and gas, are any different from adjoining strata where there is petroleum or gas. It is found in strata of all ages lying above igneous and metamorphic rocks in California.

That gas and oil can be produced from coal and carbonaceous shales is shown by the following:

In the Scotch shale industry from 20 to 70 gallons of oil is obtained from a ton of carbonaceous shales. This oil contains paraffin. Much gas is also produced.

In the manufacture of illuminating gas from coal, tar is produced. In making coke from coal, gas and tar is obtained. From these tars oil is obtained.

Petroleum oil and natural gas are the results of the distillation of carbonaceous matter (primary distillation of petroleum) by the heat of igneous rocks.

In the States of Colorado and New Mexico on the eastern slope of the Rocky Mountains is an area of several square miles in which the character of the coal depends upon the heat furnished by intrusive igneous rocks

The direct action of heat and the action of super heated steam and hydrocarbon vapors generated by injected lavas distilled natural gas and petroleum oil from the coals, and altered them.

Character of the Coals

Four different classes of coal occur in this field and the gradual transition of one variety to another.

1. When unaltered by the proximity of igneous rocks, the coal is of the kind called lignite, containing a high percentage of water, and, is altogether wanting in the property of coking.

2. When the eruptive igneous rocks are within a short distance below a coal bed, the lignite is changed to a more bituminous and, a true coking coal.

3. When the eruptive rocks were in close proximity to a coal bed and the heat continued for a long time the coal was transformed to anthracite.

4. When the eruptive rocks passed through or along side in contact with the coal, the coal was coked.

The following table will give some idea of the changes undergone by the coal:

Organic.	Carbon.	Hydrogen.	Oxygen.
Wood	52.65	5.25	42.10
Peat	60.14	5.96	33.90
Lignite	66.96	5.27	27.76
Coal coking	90.50	5.05	4.40
Anthracite	92.85	3.96	3.19
Graphite	100.00		

Water, carbon dioxide, natural gas, and petroleum oil was given off and the residual material became richer in carbon, and poorer in hydrogen and oxygen.

In Figure 1 the intrusions of igneous masses into the coal beds and sedimentary strata is graphically shown.

The passage of a dike through the measures has invaribly produced coke when a seam of coal is intersected. (See FFFF). A sheet of igneous rock G, injected into and alongside of a seam of coal H, coked the entire bed. The alteration is related to the magnitude of the intruded mass. If the sheet L, but a few feet in thickness passes beneath the coal K, the alteration in the coal K will not be as great as the alteration in the coal B where the sheet is forty or fifty feet thick. The amount of alteration is due to the position of the igneous rocks with reference to the coal. The mass of igneous rocks A, will produce a greater alteration in the coal bed B, lying above it, than in the coal bed C, lying a corresponding distance below it. The difference between the alterations being caused by the ascent of hot waters and superheated steam which does not descend with the same freedom. Lavas poured out on the surface D, exercise very little influence on the underlying coal bed, E. The heat of the overflow of lava ascended into and was lost in the air and was not conducted to the coal. As these alterations by intrusion of igneous rocks have taken place near the surface of the earth the greater part of the heat was lost, when, if deeply buried, the results would have been much greater.

It is well known that the maximum quantity of liquid hydro-

carbons is obtained from coal and carbonaceous shales by a process of distillation, under high pressure and low temperature in the presence of hydrocarbon vapors combined with a rapid agitated condensation.

The maximum quantity of gas is obtained when the above process is reversed, low pressure, high temperature and the absence of hydrocarbon vapors, with slow cooling without agitation.

FIGURE 2

What the result will be when the coals and carbonaceous shales are distilled under enormous pressure is not known at present, but it can be surmised that the amount of liquid hydrocarbons distilled will be greatly augmented.

In California many wells obtain their oil at a depth exceeding 3000 feet. At that depth a pressure of 1300 pounds to the square inch must exist, and as the oil has risen from a still greater depth, it must have originated under great pressure far in excess of that which men are capable of commercially applying.

It takes but little effort to imagine that the carbonaceous matter during distillation by nature has been subjected to many and diverse conditions. When near hot, igneous rocks, it would be subjected to a high heat, and as the rocks are very poor conductors of heat, when not very far removed to a low heat. When deep seated the pressure would always be high, but when a large volume of gas was suddenly generated the pressure would be enormous. Sometimes the distillation would be rapid, at others slow, maybe the work of years. The great diversity of the carbonaceous matter being distilled and the different substances present during distillation.

At first in the presence of superheated steam but as distillation proceeded, the steam would be driven away by hydrocarbon vapors. The mass of hydrocarbon vapors present during distillation influencing the production of liquid hydrocarbons. The hydrocarbon vapors ascended and were condensed in overlying waters. While ascending the vapors were greatly agitated, favoring the formation of liquid hydrocarbons. If sulphur was present, sulphureted hydrogen and sulphur compounds would be formed; this is also true of nitrogen.

In the Coast Ranges of California the association of gypsum, sulphur, sulphureted hydrogen, natural gas, petroleum oil, asphaltum and hot and cold mineral waters can be directly or indirectly the result of volcanism and as they are found together it is reasonable to hold that they were formed through volcanism. Each of these minerals may be formed in another manner besides by heat, but the reactions, besides heat that forms one of them, will not form another.

Underlying the State of California, in all probability, there is a subterranean lake of molten rock. At intervals, from this lake, these fluid rocks are forced into the overlying rocks and sometimes to the surface. It is to be believed that the solid axes of the mountain chains of the Coast Ranges differ in their manner of formation from a volcano mountain or hill only in the molten rock having been frequently injected below instead of having been frequently ejected, as is shown to have occurred in the Coast Ranges north of San Francisco, by sheets of lavas which have flowed out upon the surface. Moreover, it is believed that it is impossible to explain the structure of these mountain chains where the strata capping injected axes of burnt shales, igneous and metamorphic rocks have been thrown into anticlinal form, along several parallel and neighboring lines of elevation, except on the view of the rocks of the axes having been repeatedly injected after intervals sufficiently long to allow the upper wedges to cool and become solid, for if the strata had been thrown into their present highly inclined, vertical and even inverted positions by a single uplift, lavas would have gushed out and instead of beholding abrupt mountain axes of rock solidified under great pressure, deluges of lava would have flowed out at innumerable points on every line of elevation. It can be confidently asserted that the forces which slowly and by little starts uplifted the Coast Ranges and those which north of San Francisco at successive periods poured forth volcanic matter from open orifices are identical.

The frequent quakings of the earth in the ranges, are caused by the rending and slipping of the strata necessarily consequent on the tension of the land when upraised, and their injection by fluified rock. This rending and injection would, if repeated often enough, and it is known that earthquakes repeatedly affect this area, form these chains of mountains.

Superheated fluids and gases produced by these heated rocks would distil carbonaceous and bituminous matter in the neighboring rocks, producing natural gas and petroleum oil.

Figure 2 shows a partly ideal section through two anticlines of the Coast Ranges to illustrate the geologic condition described above.

The burnt shale, igneous and metamorphic cores of these mountain chains are extensively exposed in the Coast Ranges. The character of these rocks are much the same throughout their entire occurrence. Sandstones, and sandstones undergoing a change to serpentine, shales and shales undergoing a change to jaspers and many igneous intrusives are present.

(To be Continued next month)

California Production for and Field Operations During January, 1912

With sixty new wells brought in over the entire State, a total of 5170 wells producing, and the flow of several of the big West Side wells unabated, among them that of the Buick's big gusher, January's production registers but 181,217 barrels gain over that of the previous month, the gain in consumption totaling 69,940 barrels more than that of December, with the total production more than seven and a half million and the total consumption more than seven million barrels.

Without going at this point further into the figures, we wish to call attention to the fact that seven million barrels per month is eighty-four million barrels per year; and eighty-four million barrels, which will be the amount of oil consumed if the remaining eleven months maintain the consuming record of January, will be a larger consumption than the production totaled for 1911. To the outsider the exact production and consumption figures for the month past must appear stupendous. The total production was 7,627,258 barrels; total consumption, 7,065,372 barrels. The daily production and consumption are, of course, correspondingly great. They totaled: Production, daily, 246,041; consumption, daily, 227,915 barrels. The average daily surplus consequently totals 18,126 barrels. The gain in the average daily production was 5846 barrels; the gain in average daily consumption, 2264 barrels over that of the daily averages for production and consumption during December. The increase in daily surplus totals 3590 barrels. Total surplus for the month aggregated 561,886 barrels, bringing the total amount of oil now stored to 43,261,338 barrels of oil.

The standing of the various fields changed little. Midway maintained its tremendous output and lead, even increasing; exact gain over December, 136,958 barrels. Coalinga's gain for the month was 75,062 barrels. Kern River showed the slight falling off of 2325 barrels—inconsequential. McKittrick increased by 13,973 barrels its output over that of December. Sunset decreased 48,484 barrels for the month. Lost Hills increased its output by 19.3 per cent—or 8601 barrels. Santa Maria decreased 11,127 barrels. Salt Lake and Whittier both registered decreases in their outputs, the respective amounts being 3795 and 3494 barrels. Fullerton gained 27,490; Lompoc, 250; Santa Paula, 417 and Los Angeles, 550 barrels. Both Newhall and Summerland fell off in production, their respective drops amounting to 1309 and 620 barrels. Arroyo Grande made the greatest percentage drop of any field in the State, a falling off of exactly 900 barrels from the December output of 2650 barrels. Two fields only remained stationary to a barrel—Watsonville and Puente, with respective outputs of 3720 and 2550 barrels. It will be concluded from these figures, and rightly, that practically the only serious falling off in production was in Sunset; but this is likely to jump ahead again if not directly due to water trouble.

The figures for new operations show some changes. Fifty-six new rigs were completed in January while sixty-eight were completed during the month preceding. Seven wells fewer were in process of being drilled during January than during December. The total number of producing wells during January was 5170, while for December the number was 5138, which shows that although sixty wells were completed but thirty-two new ones were operating. Four wells only, over the entire reported districts, were abandoned.

Following is our regular monthly report in detail, showing exactly what happened in each district that has not already been chronicled:

	County	Rigs Comp.	Wells Drilling	Wells Producing	Wells Completed	Wells Abandoned	Prod. for Month
Kern River	Kern	3	6	1609	7	....	1,080,350
McKittrick	Kern	4	15	195	5	....	519,404
Midway	Kern	23	155	564	16	1	2,215,350
Sunset	Kern	6	47	205	6	3	491,226
Coalinga	Fresno	4	91	794	17	....	1,663,397
Watsonville	Santa Clara	....	1	5	....	....	3,720
Arroyo Grande	San Luis Obispo	....	.....	4	1	....	1,750
Lompoc	Santa Barbara	....	3	25	....	....	71,750
Santa Maria	Santa Barbara	....	28	160	2	....	554,049
Summerland	Santa Barbara	....	1	125	....	....	5,170
Santa Paula	Ventura	2	29	267	2	....	51,224
Newhall	Los Angeles	....	3	67	....	....	9,096
Salt Lake	Los Angeles	2	14	269	2	....	221,093
Los Angeles	Los Angeles	....	.....	413	....	....	35,301
Whittier - Coyote	Los Angeles	1	17	144	1	....	108,675
Puente	Los Angeles	....	1	56	....	....	2,550
Fullerton - Brea Canon	Orange	4	51	259	....	....	540,187
Lost Hills	Kern	7	24	9	1	....	52,996
Salinas Valley	San Benito and Monterey	....	2	.....	....	....	.....
Repetto	Los Angeles	....	1	.....	....	....	.....
	Totals	56	489	5170	60	4	7,627,258

Summary

	Barrels.
Stocks, December 31, 1911	42,699,502
Production, January, 1912	7,627,258
	50,326,760
Consumption, January, 1912	7,065,372
Stocks, January 31, 1912	43,261,388
Daily average production	246,041
Daily average consumption	227,915
Daily average surplus	18,126

Tabular Error in Statistics

We notice that a mistake was made in the December statistics, published on page 8 of the January number of the Derrick, which, although it involves our yearly statistics for 1911 in no way, might have puzzled anyone totaling the December figures of certain districts. Through an awkward transposition of the production figures of the Whittier, Newhall, Salt Lake and Los Angeles fields, some remarkable changes were apparent. The figures as corrected read as follows: Production of Newhall, 10,405 barrels; Salt Lake, 224,888 barrels; Los Angeles, 34,751 barrels and Whittier, 112,169 barrels of oil. In the transposed condition in which they were printed the old promise that "The first shall be last" was fulfilled to the letter,—or figure.

JANUARY EXPORTS MAKE GREAT GAINS

The January export record of 1912 exceeds the export record of January, 1911, in every branch of the petroleum export trade. This last January was a record-breaking month for petroleum exports from the United States; and San Francisco, the Pacific Coast port of shipment, more than held its own. For the first seven months of the fiscal year ending with January 31, 1912, 953,531,548 gallons of all kinds of oils valued at ***, 651,865 were exported from the United States, a good gain over both the amounts shipped and returns received during the corresponding period for the last fiscal year, when 814,916,248 gallons, valued at $50,486,455 was exported.

January exports for 1912 total no less than 125,733,469 gallons of all kinds of oil with a value of $7,514,684, a gain over the corresponding month of last year, of 20,749,976 gallons and $1,367,539 in value of products exported. The gain in quantity is practically 20 per cent, which holds good in the prices received. The refined products of higher variety met with an extraordinary demand. The growth of the naptha shipments, for instance, was wonderful; from 2,400,000 odd gallons exported in January, 1911, the January, 1912, exports of napthas reached the high water mark of 8,400,000 gallons—a clear gain of 6,000,000 gallons over January's record in 1911. The consumption of napthas is growing at a tremendous rate all over the world, but the demand for American products is keeping up with it. The extended use of napthas for power raising purposes has, of course, been the main cause for the growth of the naptha exports. Illuminating oils kept pace, among commodities exported, with the general broadening condition noticeable all along the line. San Francisco, for instance, shipped more than five times the quantity of illuminating oils during the seven months of the present fiscal year ending with January, than during the corresponding period last year. What this means to the California Oil Industry can be guessed by the unitiated—to the informed it means the ultimate dominance of California in the refined trade on the Pacific litoral.

San Francisco's Exports in Detail

San Francisco's exports doubled both in quantity and value during January, 1912, over those of January, 1911, as will be seen by a glance at the table given herewith. There was a gain in shipments of practically 2,000,000 gallons of crude; a loss in naptha shipments of more than 20,000 gallons; a doubling of the shipments of illuminants; a slight gain in lubricating and paraffin shipments; an exportation of more than 3,000,000 gallons of residuum in the month just past over the corresponding exports during January, 1911. Following is our table, from the Bureau of Statistics:

	Jan., 1911.		Jan., 1912.	
Class of Product.	Gallons.	Dollars.	Gallons.	Dollars.
Crude	6,476,693	88,384	8,064,000	115,200
Napthas	21,234	1,277	732	121
Illuminating	2,486,563	88,778	5,929,924	220,060
Lubricating and Paraffin	27,074	7,027	33,196	7,321
Residuum			3,293,426	70,683
Totals	8,711,564	188,466	17,321,278	393,385

Gain, Jan., 1912, over Jan., 1911, in gallons, 8,609,714—gain dollars, $204,919.

TEPUSQUET OIL COMPANY WILL DEVELOP VENTURA PROPERTY

The Tepusquet Oil Company, through Henry S. Livingston, has acquired a lease on 330 acres of the San Francisco Ranch from the Newhall Land and Farming Company upon which development work will begin immediately. This lease is about two miles south of Piru, Ventura County, and lies immediately east of both the Torrey and Eureka groups of wells, both producing high grade refining oil.

This company was organized nearly two years ago for the purpose of developing its holdings in the Tepusquet Canyon, Santa Barbara County, consisting of 480 acres leased land and 160 acres owned in fee, but held up operations pending development work in the Princess and Santa Maria Midway wells. The company's holdings in Ventura County, however, are practically proven, as the Torrey sands, from which the famous Torrey wells of the Union Oil Company have been producing for the past thirty years, cross the Tepusquet's property and are shown by exposures to be some 200 feet thick. These sands, highly impregnated with light oil, dip south into the Torrey mountain at an angle of 45 degrees and by locating its wells on the hill about these exposures where these sands may be reached from 1000 to 2000 feet, the company expects to develop large wells producing oil that tests better than 30 degrees gravity, Beaume. Besides these sands and the Eureka sands, three other strata of oil-bearing sands cross the property. For such light oil the handsome price of $1.25 per barrel at the wells should be realized.

About a mile to the west, one of the Torrey wells is said to have produced some fifty barrels per day of 33-gravity oil for over the past fifteen years. Years ago another of these wells came in at 160 barrels daily, produced a short time, when a land-slide cut off the casing at 60 feet from the surface and the well was lost. About a year ago a shaft was dug down by hand, this old well cleaned out and put on the pump, and proved to be good for sixty barrels per day. The present monthly production of the Torrey group of wells is about 15,000 barrels.

The officers and directors of the company are: T. J. Mylar, president; J. W. Elliott, vice-president; E. Ballanfante, Roy C. Callender and Henry S. Livingston, secretary and general manager. While Orcutt, California, is given as the principal place of business, the address of the company is 718 Merchants Trust Building, Los Angeles, California.

UNION OIL COMPANY OFFERS TO PURCHASE AGENCY'S 14,000,000-BARREL SURPLUS

By far the greatest event in oil circles in California during February is the offer of the Union Oil Company of California made to the Independent Oil Producers' Agency to purchase all the latter's stored surplus oil, amounting to 14,000,000 barrels, at a flat rate of 35 cents per barrel; the proposition was submitted orally, and did not go definitely into details but there will be a meeting held in Bakersfield on March 9th to take it up in full, and have the Independents pass upon it. It is understood that the oral plan, as outlined at the meeting in San Francisco in February, provided for the issuance of storage certificates against the oil, the Union to guarantee the certificates at the rate of 35 cents per barrel and to pay cash for all certificates delivered, up to a minimum of 200,000 barrels per month. The storage is to be furnished free and the certificates are not to bear interest.

This news has created a tremendous amount of interest and discussion. It is generally conceded that the plans for the storage company which has been so greatly talked about had not been meeting with favor on the part of the many-membered directorate, some one always objecting to whatever features were proposed. Hence it is that the Union Oil Company's action is taken in oil circles as that of a stepping into the breach by the great company, to take the place of the storage company, take the oil off the market and off the hands of the Independents, who, with their divergent interests cannot be expected to entirely agree on any plan, and thus save the situation for the Agency. While it is true that all the signs point to a brightening of the oil market, that Eastern oil is going up as the supply diminishes, that oil is gaining as a universal fuel and with the opening of the Panama canal will gain still more rapidly, still, the Independents have not the money to carry storage oil forever, the price the Union agrees to give is 5 cents per barrel more than the present general fuel oil selling price, and, more than all, the burden and care under which the Agency has labored, will be entirely removed. What the sale of this oil means to the Agency we do not need to enlarge upon. They have the opportunity to get rid of their entire surplus at 35 cents a barrel, and to dispose of the by far greater part of their monthly production at an average sales price which, minus storage costs, and with gradually increased sales returns, will be at least 35 cents per barrel and probably more. It looks like the Independent's heaven. However, there will doubtless be those both for and against. The 9th of March alone will tell.

The Diesel Type Engine

Written Especially for the California Derrick
By PAUL W. PRUTZMAN,

Consulting Chemist and Petroleum Engineer, Consulting Scientific Editor of the California Derrick.

(Continued from last month)

As to efficient use of fuel under normal conditions, the Diesel type of engine shows to great advantage as compared with the steam plant, to rather less advantage as against the gas engine and producer plant, and has some advantage even over the ordinary gas or gasoline engine.

Comparisons in figures are dangerous in a brief article, as they can apply to one set of conditions, but a very rough comparison may be made between steam plants, gas producer plants and Diesel plants, in moderate sizes.

By the use of tripple expansion condensing engines, high pressures and superheats,, automatic stokers, mechanical draft, fuel economizers and rigorous insulation, efficiencies as high as about eighteen per cent. have been had with steam boilers and reciprocating engines. On steam turbine units of moderate size, say up to 1000 horse power, no better figures can be had, but in turbine units of very large size, efficiencies up to about twenty per cent. have been realized—that is, twenty per cent. of the actual heating value of the coal or other fuel is con verted into power available at the engine shaft. Such results require very complicated and expensive equipment, entailing very large investment and high maintenance and operating costs, and in plants of simpler and cheaper design, such as would at all compare with Diesel plants in these respects, ten per cent efficiency is about the maximum. As against this we may set a figure of about thirty per cent. for the average Diesel set, say sixteen per cent. for the gas engine and pro ducer set, and from twenty to twenty-four per cent. for the old style gas or gasoline engine. As the latter are frankly barred, except in rare cases, by the prime cost of fuel (speaking here, of course, only of large units) the lowest efficiency ratio in favor of the Diesel type would be as thirty to sixteen. Or if we assume the cost of fuel at $5.00 per ton for bituminous coal in the gas producer, as against $1.00 per barrel ($6.15 per ton) for the heavy distillate in the Diesel engine, the ratio would still be 24.4 to 16 in favor of the oil enigne. This is probably the most favorable showing for the producer gas set which could be made, and overlooks all other factors in favor of the oil engine, such as lower first cost, maintenance and operation.

The maintenance of a reasonably high efficiency over a wide range of local conditions is a very important consider ation in selecting power plant machinery, as in almost all plants the maximum amount of power consumption, or peak load, is carried for but a portion of the time, often but an hour or two each day, and if the efficiency of the plant under partial load falls much below that at full load, the average for the entire working time may be much below the best performance of the plant.

In this respect the oil engine shows to great advantage as compared with the steam or producer set, or even with the gasoline engine. This subject is much too complicated to permit of any detail in these brief remarks, but the reasons for this superiority of the new type may be generally indicated.

In the case of the steam engine, the loss in relative power output caused by a constantly increasing mechanical loss with decreasing load is not counterbalanced by a rising thermal efficiency, and therefore the fuel consumption per unit of power output rises as the load decreases. It will be evident, of course, that if the internal friction of the engine and auxiliaries amount, regardless of power delivered (as it is very nearly, for any given engine) and the load on the plant is reduced by half, the per centage of loss due to friction is doubled. In the case of the steam plant there is a further loss due to the reduced efficiency of the boilers at less than their rated load, as here also there is a fixed loss, independent of the power output due to radiation and absorption of heat. It is quite possible, indeed very common, for the cost of fuel per unit of power output in a steam plant to be very materially greater at half load than at rated capacity.

In the oil engine, on the other hand, the increase in per-centage of mechanical loss is to a large extent offset by an in creased efficiency in the cylinders, so that while the fuel consumption per unit of power is somewhat greater, ordinarily, at half load than at rated capacity, it is only slightly greater.

The increased thermal efficiency at part load is a function of this particular type of engine, and is not shared by the gas engine, which indeed loses in efficiency very rapidly below the load for which it is designed. So well recognized is this defect of the gas engine that, when a highly variable load is planned for, it is usual to arrange the plant in units which may be cut in as the load increases. This of course is good design with any type of pant, but the Diesel engine may be said to stand almost alone in the respect to flexibility. The explanation of this flexibility lies in the peculiar manner of injecting the fuel into an excess of air, by which complete combustion is had regardless of the amount of fuel injected, up to the maximum amount with which the charge of air will combine, and the fact that full compression is had regardless of regulation. While in the gas engine, the fuel being blended with the air in a proportion which cannot be varied outside of very narrow limits, throttling the charge, the only practicable means of regulating, immediately reduces the compression, and with it the speed of flame propogation, and thereby the efficiency. This single phase of the subject well deserves an extended explanation, and it cannot be too much emphasized that the cycle of operations in engines of the Diesel type is very differ ent from that in any form of explosion engine, and constitutes this type, not a modification of the gas engine, but an entirely distinct type of heat motor.

(To be Continued next month)

CALIFORNIA DERRICK

The Oil Authority of the Pacific Coast

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PAUL W. PRUTZMAN, - - - - - - - - - Consulting Scientific Editor
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NOTICE.

The California Derrick most heartily recommends the advertisers in this magazine as reliable concerns with which to do business. No advertisements are solicited from business houses not of the **highest standing.** Oil company presidents, secretaries and field superintendents read the Derrick's ads to their own benefit. We advertise the concerns that are able to "deliver the goods."

For the benefit of investors we have lately secured cards from several reliable brokers whom we believe can always be relied upon. We recommend them.

As a favor, the Derrick requests its readers **not to forget,** when doing business with Derrick advertisers, to say, "I saw your ad in the California Derrick." This little courtesy will be greatly appreciated.

OIL STORAGE AND BUSINESS

There are today, in all probability, close to forty-four million barrels of oil in storage. Of this, 14,000,000 barrels belongs to the allied Independents, 22,000,000 or 23,000,000 barrels belongs to the Standard Oil Company and the remainder to the Southern Pacific and Union Oil Company, Associated Oil Company and others of lesser magnitude. A very significant fact that should be borne in upon the minds of operators in regard to the Standard's preponderating holdings of surplus is that the Standard now has two big refineries and doubtless feels there must be no chance taken, for being insufficiently supplied with oil—they must have it, and have it at all times **available.**

Available! That is the key-note to the oil situation at present. The Union Oil Company evidently wants oil that is **available** since they are offering to buy the Independent Agency's 14,000,000-barrel surplus outright. **Why do the great marketers want their oil immediately available?** There appears but one reasonable answer: Consumption is close behind production at the present time. The Panama canal is to be opened for inter-oceanic traffic in the early future. There is **practically no coal available on the Pacific Coast.** That is, at prices to compete with oil. Steamship lines are said to have arranged special through runs from Europe to Pacific Coast ports already. The oil fields of Mexico on the Atlantic and the oil fields of California on the Pacific, with the supply at the main ports of entry on the California Coast, make it a foregone conclusion that oil burners will be used straight from Europe here and back again, if there is sufficient oil. It is fairly well proven that there **is** sufficient oil—and the marketing companies with the oil in possession, and **available,** are the companies that will get the business. It is not strange, to us, that the Union offers to buy the Agency's entire reserve—while at the same time it appears to us to be a Godsend to the Agency to get this offer; because they do not appear financially able to hold their oil against time nor against competition with so much money behind it.

MISLEADING INVESTORS

The Consolidated Midway Chief Oil Company, operating in Section 15, 32-23, Midway, where the company has secured a well of perhaps average producing ability, is allowing some very misrepresenting literature to flood the country in search of "sucker money" if a recent poster sent out by H. L. Barber & Co., of Chicago, is a fair sample. This poster sets forth in big type and alluring terms that the "well gushed over the derrick" and immediately alongside is the photograph of a glorious spouter, the "Consolidated Midway Oil Co. gusher, 60,000 barrels per day. Under perfect control." The single difference of the word "chief" in the name is all that stands between the identification of the two companies in the average outsider's mind. It is probable he is "taking a $15 flyer" now—to regret later. This positively is **not** clean promotion, nor business. It's "dirt"—thrown in the face of the oil industry of this State.

OIL-LAND LEGISLATION
Dr. Geo. Otis Smith's Views

(From Geological Survey Bulletin, Giving Director's Address.)

The legislation most urgently needed to provide for the disposition of mineral deposits is a law which will be applicable to oil and natural gas. Legislative action should not be limited to an attempt to revamp the present law, but should consist of the enactment of an altogether new measure. First, the new law should authorize the issue of exploratory permits, granting to individuals or associations the exclusive privilege of occupation, the sole condition of such a grant being diligent and adequate prosecution of development work, measured by the expenditure of fixed sums within certain periods, with possibly the payment of a small fee to the Government in lieu of such expenditure during the first six months. The issue of this permit should preferably be limited to one to each citizen or association of citizens, although after the lapse or surrender of such a permit the former holder should be allowed to apply for another exploratory permit.

In the second place, the law should provide that upon discovery the holder of the permit be given a leasehold title with a royalty varied to meet local and actual conditions. The "wildcatter" or prospector in unproved country, whether such unproved territory is classified on geologic evidence as oil land or not, should be given special privilege to offset his greater risk. This privilege might take the form of an increased acreage, held both under permit and under lease, or a practical exemption from the payment of royalty, merely a nominal rental being charged under the lease.

The chief advantage of the leasehold for oil over a fee simple title lies in the prevention of monopolization through large holdings. Such large holdings without production would be guarded against by a ground rental sufficiently high to discourage the acquisition of lands except for immediate and continued development, although provision should also be made in the lease for surrender under terms which would protect the Government. This indirect control of development would be preferable to the direct enforcement, by forfeiture, of continuous production, which should be avoided because of the danger of disturbing the delicate equilibrium between supply and demand.

Transfers of interest, under either permit or lease, should be permitted because of the absolute necessity in most instances of procuring capital for both drilling and operating an oil well. The law, however, should set forth the purpose of the control of such transfer, which would be to provide protection for the original locators, most of them men of small means, and more especially to insure the prohibition of too large holdings of Government leases by big companies.

Special Meeting of Jewell Shareholders Is Called

The directors of the Jewell Oil Company have issued a thorough report on the condition of the company and have given it as their opinion that the offer of the Seaboard Oil & Transit Company to take over the Jewell's indebtedness, property and business, should be accepted, especially as it was a liberal one.

The reason the directors assign for advising the amalgamation is the impossibility of securing sufficient money, either by suit or innumerable assessments, wherewith to pay off the debts. The company has but $427 in the bank. Debts aggregate in excess of $70,000. Not only this, but the lease terms provide for the sinking of one well per month. The present situation is one which it will be utterly impossible for the Jewell to weather unless the generous proposition of the Seaboard Oil & Transit Company is accepted by the Jewell shareholders. The meeting will be held at the company's office on the eleventh floor of the Whittell Building, San Francisco, on March 23, at 2 p. m.

COALINGA

By Guy H. Salisbury

The Coalinga Crown Oil Company, Section 30, 19-15, have resumed operations on Well No. 1. The well was drilled to about 2600 feet with 4½-inch casing before the company shut down the work. The 4½-inch casing has now been loosened and will be carried through the brown shale, with the view of entering the light oil sands that are presumed to underlie the shale. The 6¼-inch was landed at about 2300 feet; this would indicate but 300 feet of friction on the 4½-inch, which is now being carried down. The strike made by the Standard Oil Company, on Section 28, 19-15, in Well No. 80, has encouraged several of the operators along the north and west line of development on the east side field.

The Canadian-Coalinga Oil Company, Section 8, 21-15, received their $2000 check from the fire insurance company within six days after the fire. Material was hauled out for the rig at once; the contract was awarded the Cross Lumber Company to build the new rig, an 84-foot standard derrick, which is now about completed. The derrick that burned down was 106 feet high, constructed for a rotary. The work has been rushed to completion that the company may open the well and again have it on the production list.

The Coalinga Royal Oil Company, Section 8, 19-15, are 100 feet in the sand, showing a lot of gas, the force of which has thrown the 1900 feet of water out of the hole on two occasions. This is a new sand, white in color, the value of which is unknown. Occasionally peacock colors show in the water when bailing out. The manager will drill into this sand further, then bail out the water and test the well to ascertain the value of the sand.

The Southwestern Oil Company, operating land formerly operated by the Six Acre Oil Company, Section 6, 21-15, are drilling out the cement in Well No. 1, the well will be bailed out to determine as to whether the water has been shut off. Mr. A. Kreis, of Fresno, one of the directors who has spent a few days about the field looking over some of his interests, speaks very hopefully of the well, believing that the company will finish up a good producer.

The United Development Company, on Section 19, 20-15, are building a large sump hole on the southeast quarter; same will be round in shape and 150 feet in diameter. Well No. 1, on Section 17, 20-15, is 1635 feet deep, has in it 1630 feet of 12½ inch casing; the 15½-inch casing was landed at 900 feet; the 12½-inch is going nicely.

The Pluto Oil Company, on Section 19, 25-19, Well No. 1 is about 2980 feet deep with the 6¼-inch casing. The formation has changed from a hard, sharp sand to a softer sand, the bit is now in the sand 100 feet and the well is showing up fairly well. The well will be bailed out about the first of March and conditions tested; the management are satisfied with indications.

The Dominion Oil Company, Section 7, 23-17, (Kings County). Well No. 1 was shut down about one month ago, work will be resumed about the first of March, the manager has been instructed by the board of directors, who are located in Toronto, Canada, to carry the well 3000 feet, if necessary, to get the pay-sand.

CALIFORNIA OIL MEN IN MEXICO

By Guy H. Salisbury

The California oil men are assuming considerable influence in the oil fields of old Mexico. E. L. Doheney and "Charlie" Canfield, largely interested in the Mexican Petroleum Company, escorted a number of capitalists from New York, Chicago, St. Louis and Toledo, last December, over the properties that the Californians are interested in. The party traveled in Mr. Doheney's private car.

During the stay in the City of Mexico, according to the Fuel Oil Journal, of Houston, Texas, Mr. Doheney was interviewed on the condition of the oil business and the development of the industry in Mexico, and stated that the Mexican Petroleum Company had ordered three tank steamers to be used in the export trade i nMexican oil. While the Derrick has already published the news of this, confirmation from another source is gratifying. At that time it was suggested that as soon as the Madero government had established its control over Mexico and could give assurance that foreign capital would be protected, the oil industry of Mexico would expand with rapid strides. All that Mexico needs is a strong government, and capital to develop its immense resources. As oil is now one of the leading industries of that Southern Republic, when this is accomplished Mexico will assume a very important position in the oil industry of the world.

EVENTS AND INFORMATION OF GENERAL INTEREST TO OIL MEN

Annual Report of Union Oil Company

The annual report of President Lyman Stewart of the Union Oil Company of California sets forth the following concerning the company's affairs and business during the last year:

Proceeds from the sales of the company's oil were $226,654.06 greater than during 1910, although the company received on an average of 10 cents per barrel less for its product. The Union's sales have increased in California and have been extended to Chile and British Columbia, while new contracts have been entered into for the disposal of oil in Alaska and Hawaii. The company authorized a bond issue of $20,000,000, of which amount $5,000,000 has been sold, while the remainder is held in trust in a Los Angeles bank. The half-ownership of the new Union Oil Building on Seventh and Spring Streets, Los Angeles, was also acquired during 1911. The percentage of net earnings on outstanding stock during the year amounted to 11.5 per cent, net earnings themselves totaling $3,489,216.81. The company's gross earnings were close to $16,000,000; exact figure, $15,974,259. Dividends for the year amounted to $2,181,048.60; to date, $25,701,992.55; of this amount $15,794,800 was declared August 20, 1908, the remainder, amounting to $9,907,192.55, having been paid in regular dividends. The big dividend was declared at the time of the increase in the Union's capitalization. The Union's property and equipment shows the company to be one of the strongest institutions on the coast. The company controls at the present time a total of 231,489 acres of land held in fee, in purchased mineral rights and in leases. The fleet of oil company ships consists of twelve steamers, four barges and two utility vessels, with a total carrying capacity of 502,950 barrels, and the company is now having built a new steamer with a capacity of 65,000 barrels for service between California and South American ports.

The Union expects to have its harbor frontage at San Pedro ready for shipping at the opening of the Panama canal. This place is needed for the dockage of the company's big tankers and other shipping. The Union has moved into the new Union Oil Building, mentioned above, which will be filled in the main with oil company offices.

Annual Report of Central Oil Co.

The annual meeting of the shareholders of the Central Oil Company of Los Angeles, held recently on the company's property, or rather, in the main office, near Whittier, was devoid of sensation excepting that the company's affairs were shown to be in excellent condition, which was to be expected. Practically all the outstanding stock was represented at the meeting, either in person or by proxy.

President W. W. Neuer read his report, which was very thorough, reviewing the company's condition in detail. Six wells were completed during the year past, two of them very recently; eight wells are now being drilled, and of these two are very near completion.

The fact that the company is using electricity for pumping and experimenting with the same power for drilling was also touched upon. The report gave expression to the opinion that the oil condition in California is in a very satisfactory condition at the present time, and that improvement was to be looked for during the year. Further, that aside from general marketing conditions the Central had no complaint to make as their oil was so valuable for refining that it would always command a good market at satisfactory prices. The total receipts for the year amounted to $415,482.13; dividends paid during the year at the rate of one and one-half per cent per month aggregated $178,622.75, exceeding the amount paid out in dividends in 1910 by $36,822.75.

The old officers and directors were re-elected without change. They are: W. W. Neuer, president; H. R. Lacey, vice-president; Robt. N. Bulla, secretary; remaining directors follows: I. A. Lothian, I. B. Newton and D. C. Sullivan. The company looks forward to another prosperous year, and with every reason for so doing.

SANTA MARIA

By W. D. Maltman

PALMER UNION OIL CO.

The latest news direct from the field is to the following effect: Well No. 1 is now doing 260 barrels per day from a depth of 2100 feet. No. 2 has been re-drilled and the pump has been changed to a 3 inch instead of 2½ inch, the well now making 300 barrels per day. There is a strong gas pressure, as usual in Cat Canyon wells. No. 3 is now re-drilled; the pipe had collapsed at 2410 feet, but the well is now going right down. No. 4 continues to flow 600 barrels per day. No. 5 is down 3070 feet, has been finished and will be put on the pump immediately. No. 6 is down 2600 feet with 6½-inch casing. No. 10 has been cemented at 3090 feet with 6½-inch casing and drilling will be renewed about March 12. Well No. 12 has been cemented off at 1362 feet; will be completed about 2400 feet. This well is about half a mile south of the Cat Canyon Oil Company well. The company delivered 60,000 barrels of oil last month. We have it from good authority that the Palmer Union people have acquired an additional 10,000 acres of proven oil land under a 10 per cent royalty lease. That their holdings will be added to as much as possible, pending the expected sale to an English syndicate of the entire holdings for $10,000,000, is stated to be the policy of the directing minds of the company. Mr. Frank L. Brown has been called to London to negotiate with the English syndicate mentioned, for the purchase of the property.

Princess Oil Company

The Princess Oil Company is installing 4½-inch casing in their No. 1 well at a depth of 3425 feet; the management expects to bring in a good well within the next 100 feet. Well No. 2 has been temporarily shut down as the management is devoting its entire time to the completion of Well No. 1.

Ideal Oil Company

The Ideal Oil Company has had much trouble lately, the latest setback being a slight crook in the 6-inch casing near the bottom of the hole. This has made it impossible, thus far, to cement off the lower water. It is probable that the pipe will be cut off at the point of crookedness. The company drilled through the oil formation and into water. They now desire to plug the hole and test the well.

Brooks Oil Company

This company is having difficulty with heaving sands so that the well has to be constantly cleaned. The product, however, is readily saleable, with a market for all the oil produced.

Santa Maria Enterprise Oil Company

The Santa Maria Enterprise is again drilling its Cat Canyon well after having been shut down for several months. The 4½-inch casing will be pulled and the water shut off with the 6-inch casing, when a test of the well will be made.

Dispatch Oil Company

Has cemented off the water-sand at the bottom of the hole, below the oil. As soon as the cement hardens the well will be pumped.

Union Oil Company

The Union is working its pumping plant and pipe-line in Cat Canyon to the fullest extent, handling the production of Bell No. 5, the gusher. The Newlove Well No. 38, in the old field, is doing 1200 barrels of light gravity oil daily.

Rice Ranch Oil Company

Rice Ranch No. 9 is coming on slowly and should soon be brought in.

New Pennsylvania

The well on the Fulger tract in Cat Canyon continues to show up finely. Lots of oil in the hole. The company will start No. 7 in the old field when the Cat Canyon well is on production steadily. The company has paid more than $67,000 since June, 1910. New Pennsylvania is in excellent shape.

Summit Oil Company

The Summit got a sand sixty feet thick at a depth of 2650 feet when an accident occurred which will delay matters several weeks. The showing of the well was excellent and much is expected of it.

Bradley Canyon

The Bradley Canyon has spudded in a well about two miles north of the Summit well. This company controls about 240 acres of land in that vicinity.

CROWDED OUT

We are withholding three pages of matter from this issue which will be run in the **March number.** The matter covers the following subjects: Correction of Water Evil; West Side Developments and New Pipe Line Projects. The delay is necessitated by the editor's trip to all the southern oil fields.

U. S. GEOLOGICAL SURVEY

The report of the United States Geological Survey on the production of gas in California during 1910, only recently issued, displays an increase for that year with a probability (we know it to be a certainty as more gas wells were struck in 1911) that "this increase will continue on account of the discoveries recently made."

The report details the fact that four large gas wells had been completed in Kern County at the close of 1910, from which the gas was piped to cities in the neighborhood, meaning Taft, Maricopa, Fellows and Bakersfield. The Buena Vista Hills gas belt is mentioned and the report further states that, "There is every indication that gas will be eventually piped down the San Joaquin to Fresno, and thence to San Francisco in one direction and to Los Angeles in the other. The latter prediction was, of course, a foregone conclusion which is already more or less in process of realization. The report continues:

"The total production of gas in California was estimated at 2,764,507,000 cu. ft. in 1910, valued at $476,697, of which 245,738,000 cu. ft., valued at $194,631, was supplied to domestic consumers, and 2,518,769,000 cu. ft., valued at $282,066, was supplied to industrial consumers. The gas supplied for industrial purposes was chiefly the product of the oil wells and was utilized for drilling and pumping in the field. The number of gas wells in California at the close of 1910 was fifty-five, three gas wells having been drilled during the year. The number of gas wells abandoned in 1910 was twelve."

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AGENTS

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LATEST QUOTATIONS ON THE SAN FRANCISCO STOCK EXCHANGE

Oil is looking better all the time on the San Francisco Stock Exchange and likewise in Los Angeles. Following are the latest quotations on the San Francisco Exchange received just before we went to press:

Company.	Bid.	Asked.
Amalgamated Oil	$59.00	$61.00
Apollo		.05
Associated Oil Stock	43.25	
Bay City		.90
Brookshire	.58	.66
California Midway	.15	.17
Caribou	1.30	
Claremont	.68	.70
Coalinga Mohawk	.50	
Coalinga National	.13	
Cons. Midway	.02	.03
Cresceus	.12	.15
Del Rey	.15	
De Luxe	.75	
Dominion		.75
Empire	1.05	1.25
Enos		.06
Four	.07	.10
Gypsy		.25
Home	.50	.80
Illinois Crude	.19	.20
Junction		.27
Lucile	6.50	6.50
Maricopa National	.21	
Maricopa 36		.70
Mascot		.90
Mecca		1.62½
McKittrick	.09	
Midway Premier	.31	
Monte Cristo	1.30	1.35
Mexican Petroleum	51.25	
Nevada Midway		.20
New Penn. Petroleum	.45	.48
Paraffine	.50	
Palmer		.75
Palmer Union		.40
Peerless		4.50
Pinal	3.62½	
Premier	.55	.60
Pyramid	.20	.28
Republic	.34	.37
Sacramento		1.00
Silver Tip	.75	
Sovereign		.14
S. W. & B.	.17	.20
Sterling		1.75
Sunset Monarch		1.00
Turner	.90	.95
Union	98.50	99.25
United Oil	.34	.41
W. K. Oil Co.	2.25	2.40
Western Union	1.12	
Yellowstone		.98

The fact that there are a number of companies not quoted here which are listed on the exchange **does not mean** that such companies are not desirable stocks and may mean entirely the contrary. There may not always be a demand for stocks in certain companies while the latter may be perfectly good; and again, some concerns are doing so well that shareholders refuse to place their stock on the exchange, as there would be no advantage to them in so doing.

There were quite a few sales during the latter part of February, displaying conclusively that the public is awakening from its apathy in regard to the oil share market. Illinois crude was particularly active, on the upward trend steadily during the last few days before we went to press. As many as 16,000 shares changed hands in one day at prices ranging from 14 to 18 cents per share. Sales were made recently of Premier at 55 cents, 1000 shares; Republic at 35 cents, 1000 shares; Turner at 95 cents, 100 shares; various amounts of Palmer, ranging from 100 shares up at from 70 to 73 cents per share; Silver Tip at 78 cents, 100 shares; California-Midway at 18 cents, 500 shares; Claremont at 70 cents, 100 shares; Coalinga National at 15 cents, 2000 shares; S. W. & B. at 20 cents, 200 shares; Cons. Midway at 3 cents, 1000 shares; 151 shares of Lucile at $6.50. Associated has been quiet in the main, selling in small lots at prices close to that quoted above. Section 25 Oil Company has declared a dividend of 50 cents per share and Sauer Dough a dividend of 2 cents per share.

Los Angeles Quotations

Los Angeles shows a livlier appreciation of the values of oil stocks than has been the case during the winter thus far. Following are the latest quotations from the Southern metropolis:

Name.	Bid.	Asked.
Amalgamated Oil	$ 50.00	$ 61.00
American Pet. Co. (com.)	43.00	
Associated Oil	42.87½	43.12½
Bear Creek Oil & M. Co.		.65
Brookshire Oil	.57	
Cal. Midway Oil Co.		.16
Central	1.88	
Columbia	1.00	1.15
Enos Oil Co.	.05	
Euclid Oil Co.		.35
Fullerton Oil		4.00
Globe	.05	.07
Jade Oil Co.	.14	
Maricopa Queen Oil Co.	.15	
Mascot Oil Co.		.92
Mexican Pet. Ltd. "Pfd."	77.37½	80.00
Mexican Pet. Ltd. "Com."	50.75	51.00
National Pacific Oil Co.	.2⅜	*2½
New Pennsyl. Pet. Co.	.42	.50
Olinda Land Co. (Oil)	.35	.36
Palmer Oil Co.	.70	
Penn. Midway Oil Co.	.07	
Pinal Oil Co.		7.00
Rice Ranch Oil Co.	1.05	1.25
Trader's Oil Co.	74.50	75.50
Union	98.12½	98.25
Union Provident Co.	97.87½	98.12½
United Petroleum	98.12½	
United Oil Co.	.35	.42
West Coast Oil Pfd.		1.01
Western Union	100.00	121.00
Non-Producers.		
Nevada-Midway Oil Co.	.12	
Oleum Development Co.	.3¼	.3½

Section Six Oil Company has levied a 2 cent assessment, delinquent on March 16, 1912. National Pacific Oil Co., of Los Angeles, has levied an assessment of 1 cent per share, delinquent April 16, 1912. San Francisco McKittrick has declared a dividend of 10 cents per share; Amalgamated paid 1 per cent February 24; Mascot pays regular dividend on the 20th of the month; Columbia Oil Producing Company pays one-half per cent regular and one-half per cent extra dividend February 26th.

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Primary Distillation in Nature

The Origin of Petroleum Oil and Natural Gas

By A. S. COOPER, E. M., Ex-State Mineralogist of California; Contributing Scientific Editor of the California Derrick

(Continued from last month)

These sandstones, serpentines, shales, burnt shales, and jaspers, igneous and metamorphic rocks have been folded, shattered, contorted, faulted, crushed and inclined at various angles, in fact, jumbled up and together through burning contraction, mountain-making movements and igneous intrusions.

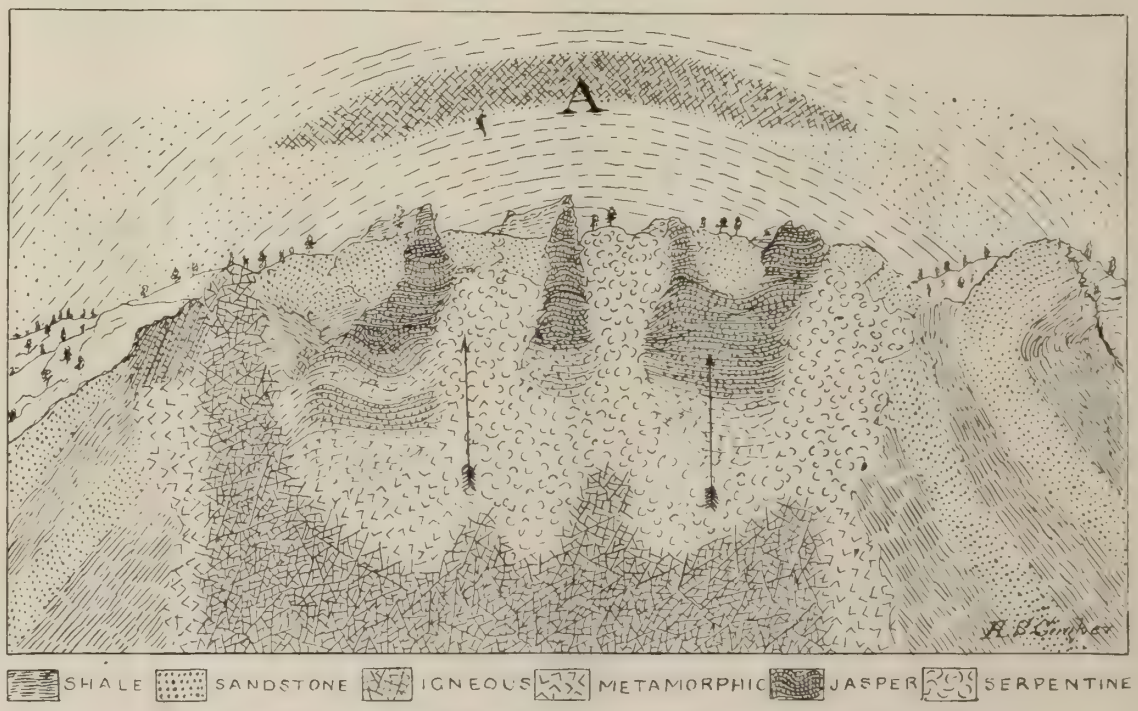
As shown in the October Derrick, evidences of heat emanating from igneous rocks are to be seen in a vast amount of rocks which overlie the igneous rocks. These evidences consisting of quartz crystals which must have been deposited from sileceous solutions having a temperature above 180 C. Also pockets of asphaltum, the residuum of petroleum oil after the distillation of its volatile parts.

The pressure required to uplift the Coast Ranges and the amount of igneous rocks present is insignificant compared to the mighty force required to raise the Sierra Nevada to an altitude within the clouds and fissure the granite summits of these mountains, through which the bowels of the earth gushed out in lurid molten streams of lava, filling the deep canyons of the then existing rivers covering thousands of square miles of land. The presence of marine shells in the fragmentary remains of sedimentary rocks near the crest of these mountains indisputably proving that they once formed the bed of the ocean.

Figure 3 represents an anticline with a burnt shale metamorphic and igneous core. While forming, the strata, which then

Illustration for "Primary Distillation in Nature", Figure 3

Drawn by A. S. Cooper



Anticline, with burnt Shale, metamorphic and Igeneous care

Where erosion of the tops of mountains or mountain chains of the Coast Ranges of California has been adequate, cores of granitic rocks, burnt shales, metamorphic and igneous rocks are exposed. From these exposures it is fair to assume that all local elevations of the Great Valley and the Coast Ranges have at a greater or less depth cores of similar rocks and, that the overlying sedimentary rocks have been uplifted by the pressure exerted by these at one time molten rocks.

Erosion has shown that at greater depths the igneous intrusions are more numerous and when abysmal depths are reached they are the dominent rocks.

existed at A, was partly filled with petroleum oil distilled in the lower rocks and carried to this position by associated water. These overlying oil accumulations have since then been eroded. Petroleum oil is now often found in the sedimentary rocks on the flanks of these anticlines. In other anticlines of this character where the igneous rocks are surmounted by sedimentary rocks, petroleum oil is to be found. Petroleum oil is generally found in anticlines which are auxiliary and parallel to these denuded anticlines which are generally lower and not as old or as much eroded as those in which the igneous cores are exposed.

CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 4 SAN FRANCISCO, CAL., MARCH, 1912. No 9.

The Diesel Type Engine

Written Especially for the California Derrick

By PAUL W. PRUTZMAN,

Consulting Chemist and Petroleum Engineer, Consulting Scientific Editor of the California Derrick.

(Continued from last month)

As regards regulation of speed, the Diesel engine stands midway between the steam engine and the gas engine. Regulation of speed on steam engines approaches perfection, and is not excelled in any other type of motor. In this respect the gas engine is very deficient, those governed by throttling responding but sluggishly, while the hit and miss type is very irregular unless run at very high speed or with inordinately heavy fly-wheels. The oil engine, regulating by cut-off in a very similar manner to the steam engine, approaches closely to that type in regularity of action under fluctuating load.

Stand-by losses, that is, costs for fuel and supplies consumed while no power is being delivered, are, of course, entirely eliminated by all oil and gasoline engines, and by gas engines drawing their fuel from holders. Steam plants, and gas engine plants equipped with producers, burn more or less fuel in maintaining pressures and heats over short shut-downs, and in raising steam and temperature after longer periods of idleness. The losses thus incurred are of minor importance, yet in plants operated but a few hours each day, as for driving manufacturing machinery, they are quite appreciable.

Maintenance costs are in the main proportional to two factors ,the complication of the engine itself, together with the strains to which its parts are subjected, and the durability of the generating portion of the set, where such is required.

Steam engines, unless run at extreme speed, operate very smoothly and with little shock, and are ordinarily kept in prime condition at a very low cost. Steam engines, however, require boilers, and on these the maintenance charges are usually quite high. As a whole, while the steam engine itself is a much simpler machine than the oil engine, the entire set—engine, boilers, pumps, condensers and heaters—is quite complicated, even more so than the engine which alone constitutes the oil plant, and maintenance charges will under all ordinary circumstances be correspondingly more costly.

As compared with the gasoline engine, the oil engine probably stands on about a parity, regarding complication, as while it dispenses with carburettors and ignition apparatus, these are replaced by air pump and injection attachments. Where the oil engine gains in this comparison is in its peculiar expansion stroke, due to injection of oil in place of explosion of a mixed charge, a sudden rise of cylinder pressure being thus avoided.

If indicator cards from approved types of steam engine, gas engine and oil engine are compared, it will be noted that in the steam engine the pressure curve on the out-stroke follows a maximum pressure line up to point of cut-off, thence dropping to atmosphere at or near outer dead center. On the in-stroke the curve follows the atmospheric line, or the vacuum line if run condensing, nearly to inner dead center, when the exhaust valve having closed, compression of the steam remaining in cylinder builds up the pressure to approximately that at which steam is admitted. This gives a curve with well rounded corners, showing that alterations of pressure in the cylinder are gradual, and shocks due to sudden pressure changes are avoided.

The oil engine shows a very similar curve on the out-stroke, pressure being constant from inner dead center to point of cut-off, then dropping to atmosphere at outer center. The next two strokes, are, of course, practically on atmospheric line, but on the fourth the pressure is built up even more gradually than in the steam engine, because of larger cylinder charge, to maximum or admission pressure. This rounded and gradual curve illustrated the great smoothness with which these engines operate.

With the gas engine an entirely different curve is obtained. Starting frm inner center, or point of maximum compression of charge, the curve rises very rapidly after ignition point, sometimes in an almost vertical line, to the highest cylinder pressure, which is usually several times the compression pressure,

thence falls to near atmosphere on the expansion stroke. On the fourth or compression stroke the pressure builds up gradually, but, as said, to much below explosion pressure. This sudden rise in the pressure line after ignition indicates a violent shock, not only to the cylinder itself, but also to all moving parts and bearings. It is probably safe to say that the high maintenance cost which has always been considered inseparable from the operation of an explosion engine is due in large part, not to the number of moving parts, but to the excessive shock of the explosion. An internal combustion engine which will operate with approximately the smoothness of the steam engine, and at the same time avoid the maintenance charges caused by boilers and gas producers, is certainly a very material advance over previous types.

As regards operating cost, the Diesel engine shares with the gas engine a very great advantage over the steam plant. Even where oil is used for fuel, the reduction in the engine room force and elimination of the fire room by substitution of internal combustion engines for the complicated paraphenalia of the steam plant is an important factor in realizing economy in power generation.

The Diesel type of engine is an invention of great importance to users of power, and as such has received its full share of attention in the press. And if it seems to be destined to make considerable inroads on steam and gas machinery in the Eastern States and Europe, where coal is cheap and oil expensive, its prospects should be even better locally, where coal can hardly compete with oil even for boiler fuel. The great advantages to the producer of oil which would follow the general introduction of such machinery lie in the use of a comparatively waste refinery product in place of crude, with a corresponding stimulus to the refining industry, and in the great impetus to consumption which always and inevitably follows a large reduction in cost of power. If, as may well be believed, such machinery would produce the power used on the Coast with a third of the oil and at half the cost of steam plants, the result would be, not a reduction of two-thirds in the oil used for fuel, but in a great increase in such use, following the increased demand for the cheaper power.

(The End)

The United States Navy's First Oil Burning Battleships The "Nevada" and "Oklahoma"

Reproduced by Courtesy-Scientific American

THE PETROLEUM ERA in the United States navy and probably in the navies of the other world powers, has been ushered in by the letting of contracts for the construction of the two most powerfully protected battleships yet designed, both of which will burn oil exclusively. These great ultra-dreadnaughts are to be 583 feet in length, 95 feet 2⅝ inches beam, 28 feet 6 inches draft, 27,500 tons displacement, and will be able to maintain a speed of 20½ knots per hour. The petroleum era, introduced by the construction of these battleships, is certain to cause the older type of battleships to be changed to oil burners, if, indeed, they are not totally discarded within a very few years.

Sacrifices Control of Yellowstone

The California Consolidated has sacrificed control of the Yellowstone Oil Company, its 520,000 shares being forfeited to that company on non-payment of the assessment levied by the Yellowstone some two months or so back. The California Consolidated tried to levy an assessment to pay the Yellowstone assessment with, but were unable to do so under the law of this State, which requires an issuance of at least one-fourth of the capital stock of the company before an assessment can be levied. As fully eight million shares are tied up in New York with the Greenamyer sales agency, known as the California Consolidated Oil Securities Company, and as this firm has sold practically none of theshares of the company, there was no way to get around the forfeiture. H. W. Wack, former chief consul for the company, has been in Los Angeles trying to get back on the board of directors from what we can judge, but thus far has not been successful. There has been considerable internal dissention, Mr. Wack alleging that J. Q. A. Walker is a "bogus" Major and desiring to get him "fired" from the directorate. Walker has retaliated with a $100,000 law suit. Mr. Wack has received no salary for services rendered since March, 1911. While desirous of gaining further information concerning the company, none is to be had at this time.

Oil wells can be pumped in this State at a cost of from 70 cents to $1.25 per day by the use of electric motors. The General Electric Company is selling motors throughout the fields very rapidly. Very recently they have sold to the Indian & Colonial Development Co., Ltd., fifteen motors; to the General Petroleum Co., six motors; to the Traffic Oil Co., three motors; in addition electric drilling apparatus is coming into favor. Economy is growing in all the various departments of the oil business.

California Production for and Field Operations During February, 1912

The features of greatest interest connected with the production, consumption and storage figures for the month of February are first, production declined both in the total output and in the daily output; second, consumption, or shipments, were smaller by 10,605 barrels per day than during January; lastly, while the daily average surplus increased slightly, a mistake was uncovered by the Standard's statistical force showing that an over-estimation of stock by producers and a loss by seepage (the latter not anywhere near in proportion to the size of the over-estimation) reduces the total amount of oil in storage as heretofore known by 1,616,200 barrels. The total amount of stored oil in the State on February 29th is, according to our figures, 42,236,635 barrels. This fact, together with the news that the Agency has sold its oil to the Union, seems to have brightened many people's horizon to an unwarranted degree. It is suggested that perhaps they will go ahead and over-produce again for all they are worth, just to be able to carry their burden of the last two years a little longer.

The production of oil in February totaled 6,893,432 barrels. The production in January, 7,627,258; decline, February, 733,826 barrels. Daily average production in January, 246,041 barrels; in February, 237,705 barrels; lessened average in February, under January's production, 8336 barrels. The consumption of oil in February totalled 6,301,985 barrels; in January, 7,065,372 barrels; lessened shipments in February under January's shipments, 763,387 barrels. The average daily consumption in January totaled 227,915 barrels; in February, 217,310 barrels, a decrease in the February daily average sales of 10,605 barrels. The daily average surplus in January was 18,126 barrels; in February, 20,395 barrels; gain in surplus daily in February, 2269 barrels. February was a slightly "off" month, but the total surplus for the entire month was but 591,447 barrels.

With the exception of but three fields every district showed a smaller output for February than for the previous month. That this was mostly due to the shortness of the month is, ofcourse, apparent and the gain of the three districts is just as naturally correspondingly greater. The three fields making a gain were Santa Paula, Newhall and Lost Hills, the greatest gain being made by the last named district, which increased its output over January by 18,511 barrels. This was to be expected as Lost Hills is growing steadily and a larger and larger production can naturally be looked for. Santa Paula made just 96 barrels more oil in February than in January, while Newhall increased its output by 654 barrels. Those who follow the production records carefully will be interested in seeing the figures recording the losses of the various districts over the previous month. The losses are as follows: Kern River, February loss, 118,855 barrels; McKittrick, 26,654 barrels; Midway, 324,404 barrels; Sunset, 72959 barrels; Coalinga, 80,987 barrels; Watsonville, 240 barrels; Arroyo Grande, 1650 barrels; Lompoc, 1350 barrels; Santa Maria, 59,546 barrels; Summerland, 410 barrels; Salt Lake, 10,936 barrels; Los Angeles, 1706 barrels; Whittier-Coyote, 16345 barrels; Puente, 150 barrels; Fullerton-Brea Canyon, 36,925 barrels. If February had been a thirty day month most of these losses would probably have been averages, or near averages, with the January outputs of the various districts.

In regard to field operations there was some little change; 63 rigs were completed in February as against 56 in January. There were 460 wells drilling at the end of the month, or 29 less than during January. At the same time less wells were on production, as the January figures showed 5170 wells producing while February shows 5157 or 13 less producing, and this in the face of the fact that 65 new wells were completed, while but eight were abandoned, which would indicate that at least 70 wells were shut down, undergoing repairs or for some other reason not operating. In the Midway this could probably be attributed to the water trouble; and it is probable that the majority of the wells not operating during the last month were in the Midway. That these wells will be put back on production as the various companies are able to look after them, goes without saying.

Following is the regular report giving the statistics of each district in detail:

	County	Rigs Comp'	Wells Drilling	Wells Producing	Wells Completed	Wells Abandoned	Prod. for Month
Kern River	Kern	14	1	1576	13	...	961,495
McKittrick	Kern	2	13	200	2	....	492,750
Midway	Kern	22	157	556	18	3	1,890,946
Sunset	Kern	....	42	213	7	....	418,267
Coalinga	Fresno	6	79	805	10	...	1,582,410
Watsonville	Santa Clara	....	1	5	..	....	3,480
Arroyo Grande	San Luis Obispo	....	.. .	7	.	.. .	100
Lompoc	Santa Barbara	....	3	21	....	....	70,400
Santa Maria	Santa Barbara	1	25	160	....	....	494,503
Summerland	Santa Barbara	. . .	1	122	....	....	4,760
Santa Paula	Ventura	2	31	269	4	1	51,320
Newhall	Los Angeles	....	3	67	....	....	9,750
Salt Lake	Los Angeles	3	12	272	2	2	210,157
Los Angeles	Los Angeles	....	....	413	.	....	33,595
Whittier-Coyote	Los Angeles	2	19	141	3	2	92,330
Puente	Los Angeles	....	1	56	....	....	2,400
Fullerton - Brea Canon	Orange	8	48	264	1	....	3,262
Lost Hills	Kern	3	21	10	5	....	71,507
Salinas Valley	San Benito and Monterey	....	2	. .	....	....	.....
Repetto	Los Angeles		1	....	...	...	.....
	Totals	63	460	5157	65	8	6,893,432

SUMMARY

	Barrels.
Stocks, January 31, 1912.	
Previously reported	43,261,388
Less amount lost by seepage and also over-estimation of stocks by producers	1,616,200
	41,645,188
Production, February, 1912	6,893,432
	48,538,620
Consumption, February, 1912,	6,301,985
Stocks, February 29, 1912	42,236,635
Daily average production	237,705
Daily average consumption	217,310
Daily average surplus	20,395

EXPORTS FROM SAN FRANCISCO DURING FEBRUARY, 1912

February, 1912, registered tremendous gains in the exportation of oils from San Francisco over February of last year, the gains in the aggregate approximating more than 100 per cent, and for several classes of oils more than 150 per cent, showing conclusively that the export trade of the United States is moving to the West, as the far Eastern markets for California illuminants and the nearer markets for California fuels and other products are being more and more largely supplied.

In February of 1911, 2,436,000 gallons of crude, valued at $34,800 was exported from San Francisco. This last month the crude exports totalled 6,132,210 gallons valued at $87,603.

Napthas showed an increase of from 450 gallons in February of last year to 7061 gallons during February of the present year. The gain in value was proportionate; from $99 it jumped to $1252. Illuminating oils show a gain in proportion to that of crude shipments abroad. From 2,937,955 gallons in February last year they jumped to 6,588,270 gallons this February; and from a value of $103,457 the advance was to a vaule of $234,843. Lubricating and paraffin oils were exported in increased quantities to the extent of about an even 50 per cent; from 28,430 gallons valued at $6231 the exports jumped to 46,796 gallons valued at $9916 during this last February. The exports of residuum declined during the month of February of this year but the decline will probably be more

than made up in March. The exports of residuum during February last year amounted to but 4000 gallons valued at $268, while for the last month they sank (in comparison) to practically nothing, amounting to only 1059 gallons valued at $70.

Following is a table showing the exports and comparisons just given and the totals, which latter are fully 100 per cent greater than for February of last year:

Comparative Table Showing San Francisco's Exports During February

	1911.		1912.	
Class of Oil.	Quantities Gallons.	Values Dollars.	Quantities Gallons.	Values Dollars.
Crude	2,436,000	34,800	6,132,210	87,603
Napthas	450	99	7,061	1,252
Illuminating	2,937,955	103,457	6,588,270	234,843
Lubricating & Paraffin	28,430	6,231	46,796	9,916
Residuum	4,000	268	1,059	70
Totals	5,406,835	144,855	12,775,396	333,684

AGENCY SELLS OIL TO UNION

Full Text of Union's Offer and Agency Resolution Accepting Same

On March 9th the directors of the Independent Oil Producers Agency voted to accept the offer of the Union Oil Company of California to purchase their entire surplus, said to amount to about 14,000,000 barrels but conservatively estimated at about 12,000,000 barrels. Fifty-eight directors of the Agency attended the meeting, which was held at Bakersfield, and of the fifty-eight all but one voted in favor of accepting the proposition as outlined in the letter of W. L. Stewart, acting for the Union Oil Company. At the time of the acceptance of the Union's proposal it seemed generally believed in Los Angeles that the Union has already disposed of the oil or at least knows where the oil is going to be marketed, although this idea may be totally erroneous. The Union Oil Company itself owns a large proportion of the storage oil and as the company is the exclusive marketer for the Agency its proposals, as made in the following letter, are considered very reasonable:

Union's Letter to Agency

February 28, 1912.

Mr. L. P. St. Clair, President Independent Oil Producers Agency,

Los Angeles, California.

Dear Sir:

Confirming verbal propositions of this morning made by the writer to your Executive Committee: In order to satisfy the situation resulting from a large amount of stored oil, the storage charges for which are a monthly charge against sales and which storage oil participates monthly in sales, and, therefore, handicaps to a large extent the Agency in the matter of taking in new members who desire at this time to sell their accumulated oil, I propose, on behalf of this company that you certificate the full amount of oil on storage March 31st, 1912, in the same manner and under the same contracts as you have heretofore certified oil, with the exception that the certificates be made to run for a longer period that is, for a time approximately four years, with the understanding that 200,000 barrels of this certified oil shall be sold each month with current production, the Union Oil Company guaranteeing a minimum price to certificate holders of 35 cents per barrel, and that the certificates will also return the full Agency price to the holders thereof; the Agency in turn to agree that in the event the price returned by the Agency shall be less than 35 cents, that the difference will be borne by the current production, the guaranty in this regard to be the same as that in the certificates last issued by the Agency.

We also propose that on all certificated oil there will be no charge made by us for storage.

We also propose that we will purchase any time within thirty (30) days from the delivery of all the certificates to the producers, or from a definite date to be hereafter determined, up to at least one-half of all of the certificates offered us, and pay therefore 35 cents per barrel in cash, or its equivalent, in bankable paper to run not longer than one year.

In consideration for the above we will require an agreement so far as it can be made by the Agency, to the effect that no Agency oil will be sold to any marketing concern during the life of the certificates, without the approval of the Union Oil Company, and further, that no new agency members will be taken into the Agency, during the life of the certificates, without the approval of the Union Oil Company.

I gathered from the attitude of the members of the Executive Committee of this morning, that this proposition has your approval, that it will be presented to your Board of Directors within the next ten days, and we, therefore, made the proposition good for ten days from date, that is to say, until and including the 9th of March.

Yours very truly,

(Signed) W. L. STEWART,
Manager Ex. and Field Depts.

Not a great deal of time was spent in discussing the Union's offer and the same was accepted by the almost unanimous vote of 57 out of 58 present. The resolution adopting the offer was couched as follows:

Resolved, That this corporation accept and it does hereby accept the offer and proposition of the Union Oil Company of California contained in its letter of February 28, 1912, and the same is hereby declared to be a subsiding and executed contract between the said Union Oil Company and this Agency; and this corporation hereby empowers and instructs its officers to proceed to fuly carry out and comply with the spirit, terms and provisions of said contract in all respects;

And Further Resolved, That conformably hereto, among other things, this corporation immediately certificate the required amount of storage oil in substantial accordance with said contract, the said certificates and coupons to be substantially in the form of those heretofore issued by the Agency;

And, Further Resolved, That any and all additional steps or actions required or necessary or considered desirable be forthwith taken and done by said officers in order to complete the matter at the earliest practicable date, and the president and secretary are hereby expressly authorized to sign and attach the name of this corporation and its seal to any and all documents, contracts, certificates and other papers necessary or deemed advisable in the premises and to fully execute and deliver the same, as the act and acts of this corporation;

In case any slight variation in the proposed plan be considered necessary or desirable the same is hereby authorized and confirmed provided the same be approved by President St. Clair, Secretary Robb and our counsel, G. W. Lane.

We might add that from the time the verbal offer was made the sale was a foregone conclusion, as was stated in our last issue.

PATENTS RECENTLY GRANTED

The following recently granted patent sof interest to the oil trade, are reported expressly for the California Derrick by J. M. Nesbit, Patent Attorney, Park Building, Pittsburg, Pa., from whom printed copies may be procured for 15 cents each.

Method of transporting oil long distances, A. E. Roberts, Sausalito, and A. L. Emery, Palo Alto, Cal., 1,016,958.

Well boring rotary bit, C. T. Dodge, Taft, Cal., 1,017,206.

Extracting appliance for use in oil or gas wells, A. P. Mc Bridge, Independence, Kan., 1,017,305.

Underreamer, G. E. Squire, Jersey City, N. J., 1,017,333.

Pipe tongs, H. G. Johnston, Corsicana, Tex., 1,017,552.

Attachment for oil wells, N. M. Fraser, Norwalk, Ohio, 1,017,663.

Gas pump for oil wells, J. P. Wintz, Ripley, W. Va., 1,017,722.

Pumping power, C. E. Clark, Wellsville, N. Y., 1,017,739.

Underreamer, Larry Fitzgerald, Whittier, Cal., 1,017,743.

Oil well pump, Irving Carl, Bakersfield, Cal., 1,017,847.

Sucker rod elevator, S. A. Guiberson, Jr., Coalinga, Cal., 1,017,869.

Utilizing sulphur-containing petroleum, J. E. Eggleston, Bayonne, N. J., assignor to Standard Oil Co., 1,018,040.

Cable and wire cutter, W. J. Sheehan and J. H. Gilbertson, Coalinga, Cal., 1,018,274.

Coupling device, D. E. Engle, Kiefer, Cal., 1,018,556.

Sucker rod elevator, Henry Viger, Stoneham, Pa., 1,018,732.

Temper screw, J. C. Kahle, Oil City, Pa., 1,018,910.

Casing tongs, E. J. Bates, San Luis Obispo, Cal., 1,019,120.

Well drilling tool, R. L. Porter and G. D. Watson, Los Angeles, Cal., 1,019,357.

Automatic self-packing-plunger pump, E. J. Schneider, Hollywood, and W. R. Ritchie and Wm. Kammerer, Colegrove, Cal., 1,019,371.

Gasolene-measuring rule, F. M. Edmonds and R. J. Goodnow, Boston, Mass., 1,019,442.

Machine for driving posts and well tubing, A. A. Mouchet, Youngsville, La., 1,019,687.

Offset-shoe and cast-iron offset-shoe guide, A. C. Graham, Oilfields, Cal., 1,019,712.

Clamping device for pipe joints, R. S. Loard, Pittsburg, 1,019,717.

CALIFORNIA DERRICK

The Oil Authority of the Pacific Coast

Published Monthly

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The * *Derrick's * * Creed**

The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's oil industry, to which it is dedicated, for the promotion of truth and in the aid of progress. For science, humanity and honor.

MONEY LOST

The heathen Chinee is peculiar, but not more so than a Government Department. Now comes the Bureau of Mines with Bulletin 19, entitled, "Physical and Chemical Properties of the Petroleums of the San Joaquin Valley of California," said bulletin containing carefully detailed analyses in tables by the yard; simply pages and pages of figures—minus what appears to us to be the facts that would make the bulletin of value to refiners, for which it was ostensibly issued. What is the use of telling us the percentage of gasoline in an oil if they do not give the gravity of the gasoline? Or the percentage of asphalt, without stating the hardness of the asphalt?

Not to be hypercritical but merely for the purpose of finding out; that is the object of this criticism. For these analyses, carefully worked out as they are, must have cost a lot of money. They could so easily have been made extremely useful. Yet, as the matter stands they are entirely meaningless. Did some chemist forget what he came here for? Whatever the cause, it seems a pity.

PRICES ADVANCED

As was to be expected, the Standard Oil Company raised the price at the well in accordance with a rate schedule here given, shortly after the Union Oil Company bid 35 cents for the Agency's oil. The Standard avers that the Union's bid had nothing to do with it. The fact remains that it all happened at once. "Good things never come singly." However, the discovery that there was an over-report of more than 1,600,000 barrels of oil in storage; that water was coming into Midway and silt was coming with the water; and that the producers were not breaking their necks to break the production records while consumption continued on the increase; these matters doubtless fixed the schedule on a higher basis. Standard raised the price of refined the same day that they raised the price to be paid for crude. Associated, it is announced, met the raise on fuel oil. Lately Associated has been getting much of the higher gravities of oil and it is thought that this is the strongest reason by which Standard was influenced to raise on the higher gravities. Following is the Standard's new rate schedule:

18 to 20.9 degrees, inc.	$ .35
21 to 23.9 degrees, inc.	.50
24 to 26.9 degrees, inc.	.55
27 degrees and lighter	.60

The prices fixed by the Standard and which were in effect until the rise were:

Up to 22 degrees	$ .30
22.9 to 25 degrees	.45
Over 25 degrees	.50

It is conceded that higher prices will soon obtain than are now in force under the rise, unless the boys who produce can't stand being without that producers' incubus, "over-production." However, on account of the increasing demands, they would have a hard time doing this.

OIL AS FUEL

At this time, when the gravest of conditions exist in England on account of the coal workers strike, and when our own country is menaced with a threatened walkout of some half million miners, peculiar attention is called to the extraordinary advantages of the use of oil as fuel, of the wonderful advance of the crude oil-consuming engine over the coal-fired steam engine as a motive force in relation not only to its economy, its cleanliness and its compactness, but also because of the fact that there is a good supply of fuel to be had and the fact that this supply cannot be menaced by strikes. Aside from this singular attention attaches to the fact that oil is the most humane power-raiser known; by this we mean that no lives are given up in getting the oil out of the earth (or at least very few, the proportion of those lost in mining coal being so small as not to be properly comparable), and that after the oil is out of the earth, practically no loss of life attaches to its handling, nor is it necessary for men to slave thirty and forty feet under water feeding engines in a heat so terrific that they often fall from exhaustion and occasionally die under the strain or from the effects of it.

For humanity's sake, use oil! Not because some million people in Great Britain, threatened with an ever-encroaching starvation, and slaving to the uttermost against the increased high cost of living, sometimes more than a mile deep in the ground, have gone on a strike for a living wage; not for **this** reason. No! but, aside from utility, for the present minute, for **humanity's sake,** use oil! If less coal miners are worked, other work will be found for them to do, doubtless created by the very means that puts them out of work, and doubtless of a happier character.

For utility's sake, use oil! It can be stored in the false bottoms of the vessels in which it is used as fuel, and thus can be saved the tremendous amount of space now given over in coal-fired vessels to bunkers in which to store the coal. In this saving of space is a direct saving of money as space is valuable in proportion to the amount of freight that can be carried in it. Presuming that oil is to be used to make steam, and not directly through the use of internal combustion engines, consider that there is neither soot nor cinder to bother the passenger, and when combustion is rightly regulated, litle smoke. Consider, too, the reduced force of help, doing away with the necessity for space and lodging of these, both items of which are expensive. Consider the fact that passengers prefer to ride upon an oil burning steamer rather than upon a coal burning vessel. And, finally, there is the matter of cost of fuel. Is coal any cheaper, actually, by the ton, as a power raiser for steam vessels or plants, on the Atlantic Coast, than oil? We would like a side light on this! We would like the truth. We feel that the truth would be in favor of oil. But, even if the cost were proven slightly in favor of coal, we know that the universal use of oil as fuel is due in the near future as far as vessels are concerned, where it is possible to get the supply. Vessels running from Europe to San Francisco and other Pacific Coast points are going to be able to get the supply ,because conditions in Mexico will not be upset forever, and California, at this end of the run, will be able to provide sufficient for the Pacific Coast.

Aside from the use of oil as a steam raiser for ocean-going vessels its use directly in the internal combustion engine of Diesel type promises a distinct and decidedly greater market, at present, than any other future market now in sight, because of the remarkable economy of the engine. Vessels like the "Selandia," shown on another page, are going to be turned out from the shipyards of the world rapidly from now on. This vessel is described elsewhere in this issue and it will pay every reader to turn to that description and see why this type of vessel promises so extraordinary a market for oil in the early future. One might almost say that their use is foreordained—because of the economy of oil.

An Important Act

The new public utilities law which has recently gone into effect in this States makes **pipe lines a public utility** which the State Railroad Commission will have power to regulate as regards rates, equipment, facilities and extensions; and "no public utility will have the right to sell any of its property devoted to public service, or dispose of its franchises, or merge or consolidate with another public service corporation, or issue any securities without having first secured the consent of the Railroad Commission": this according to the definition of Max Thelen, now a member of the Railroad Commission and its former attorney. It looks as though the corporations which have shown the enterprise to build pipe lines were to be made practically subservient to the Commission, but for the fact that an appeal to the courts has been made easy for such as may not wish to go by the Commission's dictum.

A FEW FACTS

Cupidity is the root of much financial evil.

The man who wants afortune on one night's investment is the same person who purchases the gilded brick and yells when he finds it's NOT pure gold.

If those who purchased shares in worthless companies during the boom had invested (invested is the word used) in Associated, Union or Standard Oil issues, they would have more money today than they then had; and as much more now than they then had plus the various assessments they have since paid, while in the case of the Union they would have realized dividends—in the case of the Standard great increase in value of shares; in the case of Associated, an increase in share value and property value.

The true "sucker" always buys at the top and sells at the bottom.

Practically all the oil fields in the world are dwindling in output with the exception of California and Mexico.

The Russian Steam Navigation & Trading Company have placed an order for six great Diesel-engined ocean liners with two English shipbuilding firms, the vessels when completed to be used in the mail and passenger service between Odessa and Alexandria, and Odessa and Crimean and Caucassian ports. The Diesel idea is catching.

All the world waits to jump in at the top. The wise man only buys when shares are low.

Many companies which have combined their fortunes have been said by some wit to have combined their misfortunes; still these very companies almost always pay dividends in the end. Associated oil was a number of small companies not so many years ago.

Government Withdrawals With Purpose

The Government withdrawals of oil lands have been made with a purpose for in recent bulletin in which the withdrawals are discussed the following significant paragraph occurs: "It is also evident that the Government should retain a supply of petroleum for the American navy, in which every new ship is now equipped with oil burning boilers." This leaves no loophole for doubt as to whether the Government intends to operate its oil lands the only question being whether the operating will be done directly or through leasing to individuals or corporations. To date withdrawals of lands classified as petroleum bearing in this country aggregate 3,402,866 acres, scattered in the States of California, Oregon, Wyoming, Utah, New Mexico, Colorado and Louisiana.

ACTION AT LAST ON WATER EVIL

State Mineralogist Storms Uses Influence to Unite Operators Against Common Menace.

Brought together at last by a common menace, the oil operators most greatly threatened in the Kern County fields, which include Kern River, Sunset, Midway, McKittrick, McKittrick Front, Belle Ridge and Lost Hills, have apparently united to combat the water evil; that is, the encroachment of water into the oil sands of the various districts named. On March 9th, the same day that the Agency accepted the proposal of the Union Oil Company guaranteeing 35 cents per barrel for their stored oil, a meeting was held in Bakersfield following the Union-Agency meeting at which plans were perfected to protect the sands as much as possible from the encroachment of water.

At this meeting, which was very largely attended, committees were appointed to make the action undertaken a concerted one and not haphazard and thus ineffectual. A committee consisting of D. S. Ewing, Col. T. A. Spellacy, M. J. Laymance, J. D. Spreckels, Jr., T. H. Minor, W. H. Hill, T. M. Young, B. T. Dyer, S. A. Jones, H. W. Thomas and A. J. Crites was appointed to carry into effect the plans decided upon. These consisted, as far as we have been able to determine, mainly of the determination to levy an assessment of 2½ cents per acre per month and one-fifteenth of a cent per barrel of oil produced, the money obtained to be used to educate the operators in a practical manner in the methods of shutting off water and the absolute necessity of so doing unless they wish to lose their oil. A bill for passage at the coming legislative session will be drafted to aid in the fight to keep the oil sands free from water, but as to the main features and how the bill will aim to do this we have no news.

There was a great deal of discussion at this meeting. All agreed that something should be done and were willing to do something, but the amount of what was to be done was the sticking point. The present plan is one that is purely voluntarily co-operative. There is no legislation at present making it compulsory to shut off thewater containing a damage clause or penalty clause for violation; the operators as a whole cannot be made to agree on this matter. One holds that no such law is needed or could be justly applied; the next man holds exactly the contrary.

Dealing with the water problem is a very complicated matter. No one can positively say where the water comes from as often a well may be cemented off perfectly and still water will be found in the sand in ever increasing quantities. Sometimes the water and oil lie together in the same beds, the oil naturally lying on top of the water and as it is pumped off, allowing the well to make a greater and greater percentage of water. There are so many angles to the problem that unified opinion on anything concerning it, excepting the main fact only, that it should be handled best as possible, is almost impossible.

In the matter of cementing opinion State Mineralogist Storms has done a good work. It is to him that credit must be given for calling the operators together to combat the most terrible menace the oil industry has today; for such it is; and further, it is the greatest menace that confronts the State of California today, if the State of California only knew it. California is absolutely dependent industrially upon the oil deposits in this State, and is dependent for its commercial activity in a very large degree upon the same source. If all our fields were to be flooded by the criminal negligence of the careless who drill a well for oil as if they were drilling for water, the greatest waste of modern resources would have been accomplished. However, this will not be and the condition is not as bad as some picture it. Still, the condition has reached a stage where it must be fought.

Mr. Storm's Statement

State Mineralogist Storms, in a recent interview with a representative of the "Derrick," had the following to say:

"While this business is new to me, in response to an urgent request I have attempted to do something which will be of material benefit to the oil operators of Kern County. I am not trying to do everything at once, but first to organize the Kern County operators into a defensive body for fighting the water evil, and once this is accomplished, and the results attained, it will be my endeavor to perfect like organizations in other fields and counties.

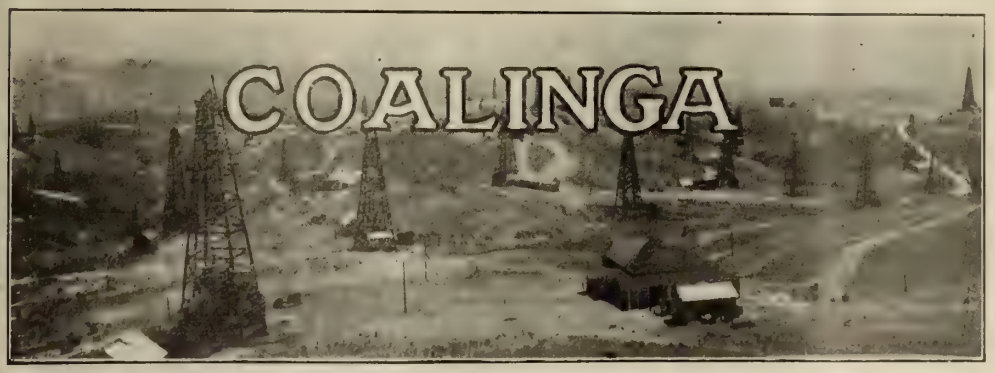
"All the big operators and most of the small ones seem to realize that the time for delay has passed. Now is the time for action. Water has come into the Kern River field at a pace that has astonished and dismayed. I know of certain wells there pumping 85 per cent water and 15 per cent oil. In the Midway field certain wells that have been "show" wells, that is, used to display to the visitor what a gusher looks like, have changed with remarkable rapidity from gushers to water and oil emulsion producers. Water has been gaining rapidly in Midway, due to improper methods in cementing off the same from the wells, and to other causes. Operators are not always willing to acknowledge the fault lies in their well and will charge a nearby operator with the trouble when, all along, it comes from their own property. Now this is changing. Operators are beginning to realize that the water should be shut off on their own property as fast as in some neighbor's well. The result is a unanimous willingness to form an association to aid in shutting off the water. When this association has been formed and is provided with the funds to do the work, a good beginning will have been made in checking the greatest menace confronting the oil people today.

"This business of forming an organization to correct an evil of which I was ignorant until taking the office of State Mineralogist perplexed me at first but someone had to do it and as the last legislature left the work undone, and as it would be fully sixteen months before they could even get down to consideration of the matter again, I was very glad to undertake the responsibility. I find the oil men extremely courteous and willing to co-operate in every way. I think that the evil we wish to see eradicated can and will be well handled by the new association."

The appearance of water in Lost Hills and Belleridge has got operators in those districts into a most willing frame of mind, while in the other fields mentioned those companies having the most at stake are stated by Mr. Storms to be the Standard, Associated, Union, Santa Fe, Southern Pacific and Esperanza.

2 RIGS CHEAP

Will sell complete Parker Rotary Drilling Rig, practically new, for amount of judgment, $1500. This rig cost over $6000. Also one Standard rig, complete in every particular, for $1000, if sold immediately. Call or write immediately, "J. W. F," 1408 Call Bldg., San Francisco, Cal.



The News from This Field is Written By
GUY H. SALISBURY—California's Best Known Oil Correspondent

Lucile Declares Dividend

The Lucile Oil Company, operating on Section 6, 21-15, recently held the annual meeting of the stockholders, who elected the following directors and officers: J. M. Robertson, president; Geo. W. Davis, vice-president; J. R. Davis, secretary-treasurer, and John Webb and Z. L. Phelps. The directors declared a 10 cent dividend, payable immediately.

California Oilfields, Limited

The California Oilfields, Limited, has a force of workmen engaged on Section 21, 19-15, on road work, making a way to haul in material to develop the south line of that section. The first work will be to offset the Standard wells along the north line of Section 28, going after the new light sand.

Hibernia Abandons Well

The Hibernia Oil Company, that started drilling on Section 2, 23-16, have sold the rig and rig irons to parties operating in the Lost Hills district. Other obstacles than "formation" are reported to have caused the Hibernia to abandon their well.

Potters Commence Work

The Potter people, of Los Angeles, who leased forty acres from the Traders Oil Company, on Section 35, 20-14, have completed the rig for their No. 1 well. They have a small camp to accommodate the help and will spud in as soon as the drillers rig up.

White Creek Coalinga Company's Well

The White Creek Coalinga Oil Company, Section 2, 21-14, completed Well No. 1 at 285 feet, with 6⅝-inch casing. The well is showing up finely; thesand is loose and oil percolates freely into the well.

Union Will Shut Off Water in La Vista Well No. 4

The La Vista Well No. 4, of the Union Oil Company, drilling in the northwest corner of Section 4, 20-15, is about 3300 feet deep with 8¼-inch casing; the manager will shut off water with this string of pipe.

Berkeley-Coalinga Oil Company

The Berkeley-Coalinga Oil Company, Section 2, 21-15, Well No. 2, is supplying the drilling wells on that section with fuel oil. The company has three wells completed.

United Development Company

The United Development Company, Section 17, 20-15. Well No. 1 is 2050 feet deep with 10-inch casing. The formation is what is known as the big blue. Hole is in fine condition; pipe going nicely.

Coalinga Crown Gets Light Oil in Section 30

The Coalinga Crown Oil Company, Section 30, 19-15. Well No. 1 is now 2955 feet deep with 4½-inch casing. The well had a blow out a few days ago that took everything out of the hole and filled up the casing for about 1000 feet. The pipe was pulled up and the mud bailed out and the well is now bailing out a lot of oil that appears to be of about 35 degrees gravity. Men from the Standard Oil Company's well on Section 28, who have called at the derrick, state that the Crown's product resembles the light oil of Well No. 80 on the Standard property. This strike appears at present to have brought in a productive sand under the brown shale formation, the formation has alternated from blue, gray and brown shale with stringers of sand for over 900 feet. J. C. Pottle, of Fresno, who is general manager, has been assisted by Fresno capital; the company are well deserving of the success that now appears to be theirs. If the discovery is what it appears to be, it brings in a large territory lying north of the north end of the west side field.

Esperanza, or "General Petroleum Co."

The Esperanza Consolidated Oil Company, that has been operating under that name in this field, in the Lost Hills, and in Midway, has again changed the company name and is now known as the "General Petroleum Company." The work of the company in the Lost Hills is progressing satisfactorally on Section 4, 27-21, where the fourth well drilling (on Location No. 13) is 1308 feet deep with the 6⅝-inch casing. Considerable gas has been encountered in this well; one pocket of gas entered blew the water and oil out of the casing, but was soon brought under control. Well No. 1 has 28 feet of sand. The casing was landed on a shell and the well is producing 30.2 degrees gravity oil. Well No. 2 has 29 feet of sand and is producing 33 degrees gravity oil. Well No. 3 has 37 feet of oil sand and is producing 35 degrees gravity oil. The further south on the formation the lighter the oil. These wells are all on the same section.

Spokane-Coalinga Oil Company

The Spokane-Coalinga Oil Company, Section 2, 21-14, havo drilled a water well near Well No. 4, securing a good supply of water; as water is very scarce on this section this well will enable the company to run full time. A report has got in print, somehow, that there was some trouble with water on this section while the fact is there is very little water in the formation at any time, the water wells that were drilled have in most cases, even at very shallow depths, pumped for a while then have been ruined by oil coming in. The present water well has the oil cased off with one string of casing, another string having been used to enter the water sand.

Standard Operations in Lost Hills

The Standard Oil Company, Section 4, 27-21, Lost Hills, operating half a mile due east from the now "General Petroleum Company." Well No. 1 of the Standard is drilled to 1840 feet and is still in shale, the drill not yet having encountered either gas or oil; Well No. 2 is 1600 feet deep; no oil so far. The formation is pitching fast to the east and the oil sands lie under the shale in which the well is now drilling.

Another "Limited" Well

The California Oilfields, Limited, have cemented off the water in the well near the southeast corner of Section 29, 19-15, at 2100 feet. This will offset the Standard well on Section 28, 19-15.

Camwell Oil Company

The Camwell Oil Company, on the old Merced lease, Section 22, 19-15, are drilling Well No. 4 deeper for a lower sand, reaching down for a high grade oil.

Standard On 36

The Standard Oil Company, on Section 36, 19-15, cemented off the water sand at 3444 feet with 8¼-inch. The manager of development looks for the pay sand at a little less than 4000 feet; light oil.

Phelps and Cheney

Phelps and Cheney, on Section 2, 21-14, are about 400 feet deep in Well No. 1, with 8¼-inch casing. They have a showing of oil and some gas.

AGENCY'S ANNUAL MEETING

The annual meeting of the Independent Oil Producers' Agency will take place in Bakersfield April 10th and itis expected that the ratification of the sale of the Agency members oil will at that time be made. The election of officers and executive committee for the coming year will come up at the meeting; it is expected that those who have piloted the Agency's affairs with such signal success will be chosen to succeed themselves as no talk of any other candidates for their positions has been heard thus far and appreciation will naturally dictate their continuance in office after their accomplishments of this last year, the most difficult in the Ageney's history.

The Oil Well Supply Man's Page

Note:—(This is the first try-out of the "Derrick's" new co-operative plan to benefit both the oil well supply house and the supply user in the fields. It is our hope that this department, which has been planned with the sole idea of giving valuable information to supply users, will so recommend itself that it can be enlarged greatly, made a standard department in the "Derrick" which will be read by everyone who wishes a reference both of supply houses and the quality of supplies. While the information in this installment is somewhat slim, it must be remembered that we are **pioneering** and that **the oil well supply houses are not used to treatment of this nature** and being unprepared have not presented as much for this first page as they can ordinarily be expected to do.)

Ideal Pumps—Union Tool Company's Descriptive Pamphlet

The Union Tool Company, the greatest oil well tool manufacturing company in the world, which has its headquarters in Los Angeles, has just issued a pamphlet describing their Ideal Pump, which is manufactured in two different styles. In the introduction to the description of the pumps the company states:

"It is our aim in compiling this folder, containing cuts and descriptive matter of the Ideal Pump, to arrange every detail in such manner as to make the same plain and complete. We make two different styles of pumps, as illustrated, of different sizes, lengths and combinations, to meet the various conditions of the well and different ideas of the operator. We have a thorough system of inspection for defect of material and workmanship of each, and every pump, and each separate part of the same is tested for size and fit with templates and gauges, and each pump is tested after being assembled and inspected before shipment. A complete stock of all pumps of various sizes, as well as different parts for the same, is always carried in stock at the main factories and also at the branch shops in the field where material is needed promptly. Our facilities are unsurpassed for manufacturing these pumps of high grade material, and it is always our aim to meet all requirements of the trade."

After the introduction there follows a number of cuts showing the pumps inside and out in detail. The barrel, or outside casing of the Ideal Pump is made of steel tubing, with steel upper and lower couplings; the liner, or working barrel of semi-steel, a very close-grained material, which field practice proves to give longer life than cast iron. Another special feature of the liner is that it is made in one piece and so constructed that it can easily be removed at the well and replaced with a new liner, saving time, annoyance and expense to the operator. Each liner is equipped with its own specially fitted plunger. A simple locking device secures the couplings at top and bottom of the barrel to prevent same unscrewing in the well. The cuts show the lower coupling, standing valve, lower crown, ball, lower plunger nut, etc., in detail, all inside the pump in working order; that is, the cuts show these different portions as they are. There is a table giving the size of tubing, inside diameter of barrel, length of barrel and weights. Altogether there are eight cuts giving a very thorough idea of the pump.

Lacy Manufacturing Company

The Lacy Manufacturing Company, the oldest tank builders on the Pacific Coast, have an enviable record. They have built a great number of tanks for the Santa Fe railroad, a great many for the Southern Pacific railroad, for the Producers' Transportation Company, and for various other big concerns. They are in the front rank of plate and sheet steel workers and have built numberless stills now in use in refineries on this Coast, the latest, if we are not mistaken, being those constructed for the Pinal-Dome Oil Refining Company, whose plant is in the Santa Maria field. The Standard, Associated, Union and Doheeny interests have all had and undoubtedly will continue to have work done by the Lacy Company. The Lacy Company has a tremendous works and business in Los Angeles, their offices being at 334 Main Street. They make a specialty of riveted steel well casing and riveted steel pipe.

South Chester Wrought Iron Drill Pipe Makes Record

Well No. 2 of the La Belle Oil Company, located on Section 4, 32-23, in the Midway field, which was started down January 15th, has the remarkable record of attaining a depth of 2300 feet with 6-inch South Chester wrought iron drill pipe, without a break of any kind in the drilling string. This well will be finished at about 3300 feet and at the present rate of drilling it is expected that it will be brought in in the early future. Results in the next issue. The South Chester is handled on this Coast by the well known firm of Woods & Huddart; in the Midway field by Stone Hastain.

Bessemers Gaining Big Business

The Bessemer Gas Engine Company, of Grove City, Penn., with offices in the Citizens' National Bank Building, in Los Angeles, and in the Brower Building, in Bakersfield, are certainly making a record on this Coast for the installment of gasoline-from-gas engines. They are also doing a big business in their motors. F. D. Hall, manager of the Western Gasoline Company, in the old Santa Maria field, has installed two 50-horsepower Bessemer gas engine driven gasoline-from-gas compressors on the Hall & Hall property about six miles from Santa Maria. Tests of this gas show two gallons to the thousand feet of gas after compression. The plant will treat 700,000 feet in twenty-four hours, and will average about 1000 gallons per day. The Dome Oil Company, of which J. F. Goodwin is manager, is installing two 60-horsepower compressors on their property in the old field. A conservative estimate of their gas production rates is at least 10,000,000 cubic feet a day, with a gasoline content similar to that of the Hall & Hall gas, two gallons to the 1000 feet. However, they will handle only about one-tenth of their production, 1,000,000 feet daily, and will thus produce, if expectations are realized, 2000 gallons of gasoline per day. In the Fullerton field the Pacific Gasoline Company are adding the fifth machine, an 80-horsepower compressor. They now have three 80's and two 60's. They are turning out at present about 3000 gallons daily. In the matter of pumping engines the Bessemer people are making a regular hole in the trade. Inside a year they have sold the Southern Pacific Company 120 reverse clutch oil pumping engines for use on the K. T. & O. properties, their last order being for forty-four in one batch. The Universal Oil Company, operating in the Lost Hills, recently ordered six reverse clutch Bessemers of $22\frac{1}{2}$-horsepower each.

J. F. Lucey Company

Mr. Paul N. Boggs, of the J. F. Lucey Company, has promised to send us certain catalogues which we expect to review in the next edition. Just at this time, however, we would like to call attention especially to the new advertisement the Lucey Company is carrying on the first page in the book. The Lucey Company is in every way a reliable and splendid organization, and carries on one of the biggest supply businesses in the State of California, shipping to all parts of the world, even as far as Burmah, and likewise all over America. The Lucey Company handle a splendid line of supplies of all description.

To Our Advertisers!

This page is for **you**. Its especial business is to call attention to **your business**. If you have gotten out a pamphlet which ought to be reviewed, send it to the advertising department of the "Derrick." If you have a letter from a customer saying that he believes your specialty is the best, send it in. It will interest the trade. They want to get the opinions of those who have used your goods. Thus a double good will come of giving this matter your attention, your sales will be extended and the operator will be served at the same time.

GENERAL NOTES

The United States Supreme Court has appointed a commission to take evidence in the case of the Government versus the Southern Pacific in which the Government is seeking to recover some 440,000 acres of land from the railroad company which the latter has no right to be in possession of according to the Government's contention. The lands are in Kern County and Fresno County. The commission is expected to convene in Bakersfield early in April. A report on the lands under contention has been made by A. C. Veatch, the famous geologist, and this is in the hands of the Department of Justice. The entire case rests upon the question as to the value of the "exclusion and exception" clause written in all the documents pertaining to the grants and patents issued the railroad by Congress; if the exclusion and exception clause is held to have meant to save the "mineral lands," under which the oil lands in question are classified, then the Government retains title to the lands; but if it is proven that Congress didn't know what it meant when that exclusion and exception clause was placed in the grants, then the lands are, once and for all, beyond all question, the property of the Southern Pacific Railroad Company.

It cost the Union Oil Company 60 cents a barrel to produce oil on the Sunset Road Oil property, under lease to the Union, according to a statement made by Field Superintendent Hill in his testimony recently in a foreclousre suit. Hill said that the heavy quality of the oil, the small production of the wells and the large amount of sand which comes up with the oil contribute to the expense of the production. Is it any wonder, then, that the Union is willing to pay 35 cents per barrel for that "14,000,000-barrel surplus?"

The First Ocean Liner Propelled by Diesel Engines

The "Selandia"--The Diesel Engined Ocean Liner

Crude oil burning engines ceased to be an experiment several years ago, but, with the completion of the new ocean liners, "Selandia," "Fionia," and "Jutlandia," each of which derive their power exclusively from oil used in Diesel engines, and one of which has come up to the highest expectations, the "Petroleum Era" may well be said to have begun. While neither the "Jutlandia" nor "Fionia" have yet been completed, the "Selandia" is now on her maiden voyage from Copenhagen to Bangkok, after having come up in every way to the specifications and demands of her builders. She is as much an event of interest in scientific engineering and petroleum circles as was the "Clermont" on her maiden voyage up the Hudson River—"event" is the proper word because the advent of a ship of the "Selandia's" proportions propelled by crude oil exclusively, which will travel the seas at a tremendously reduced cost over that of the prevailing type of ship, **IS** an **EVENT.** The "Toiler," the Diesel engined vessel that crossed the Atlantic last year, was but a promise of the expectations that the "Selandia" so magnificently fulfills.

The photographs show the "Selandia," taken when making a trial trip, and, a view of the new vessel's engine room. The picture is so small that one cannot gain an adequate idea of the size of the vessel as there is nothing else shown wherewith to judge proportions. The length of the "Selandia," between perpendiculars, is 370 feet; breadth, 53 feet; moulded depth, 30 feet. Her displacement is 9800 tons with 7400 tons dead weight. The "Selandia's" gross tonnage is 4900 tons; net register tonnage, 3200 tons. The speed at sea with full cargo is 12 knots. The fuel is carried in the vessel's double bottom, which has a capacity of 900 tons. There is an appliance to heat the fuel in case it gets too cold to pump when in the colder waters of the north in the winter time.

The "Selandia's" machinery consists of two main eight-cylinder Diesel type motors, working on the four-stroke system, each being of 1250 horsepower, and two auxiliary Diesel type motors each of 250 horsepower, giving in all 3000 indicated horsepower. At the designed rate of 140 r. p. m. and using only the two main engines developing 2500 horsepower the vessel made 12½ knots per hour on the official test voyages. Each of the main engines consumes somewhat less than 500 pounds of oil per hour, the total consumption per day for both main and both auxiliary engines amounting to just about twelve tons. The mechanical efficiency of the engines was found in the works of the builders (Messrs. Burmeister & Wain) to be about 84 per cent. The cylinder diameter of the main engines is 20⅞ inches and the piston stroke 28¾ inches.

The engines are reversed by means of compressed air, and it is stated that reversing from full speed ahead to full speed astern can be executed in less than 20 seconds. This is done by letting air of 20-atmosphere pressure into the cylinders through the starting valve after the motor has been brought into the back gear by the reversing engine, the starting valve commencing to work automatically upon the introduction of the compressed air. There are a number of descriptions of this operation but the best we have seen, in all probability, is that by Mr. F. C. Coleman in a recent number of the "Scientific American," who says:

"When the engine driven by the air has attained a sufficient speed, the handle is moved further, the air is shut off, the starting valves close themselves and the engine works as an ordinary Diesel motor. The work of the engine at sea is regulated by an Aspinall's governor, acting so that, with a sudden increase of the number of revolutions beyond the normal it shuts off the supply of fuel oil and opens again only when the revolutions have dropped down to a predetermined number. On the shaft is a small fly-wheel, two meters (6.56 feet) in diameter. This is provided with teeth which engage a worm so that by means of an electric motor the main engine can always be turned." Thus the starting and control of the engine is always assured.

The "Selandia" is owned by the East Asiatic Company and will carry between Great Britain and far Eastern ports. She is a freighter with almost palatial passenger accommodations. She was built at Copenhagen, in Denmark, and her name commemorates one of the three big sections of that country, just as the name "Jutlandia" and "Fionia" commemorate the other two sections. The ship "Fionia" is now being built in Denmark by the same great ship building firm that constructed the "Selandia." The "Jutlandia," however, is being constructed on the River Clyde, in Scotland.

Europeans Greatly Interested

European marine and engineering circles are tremendously interested in and wrought up about these new ships, which will save so much money and which place shipping, and thus imports (meaning especially at this time food imports), out of the reach of strikes on the part of the coal miners. On account of the great strike in England special attention was, of course, directed to the "Selandia," and many were the favorable comments made.

Europeans are "wild over" petroleum, anyway; they are more alive to its advantages than are Americans, who possess the major world's supply at present. That this is so is evidenced by the fact that the Diesel engine is a German invention and not an American idea, although Diesel type engines, said to be of superior design to those on the market abroad, are now being constructed by at least one American firm, the Atlas Engine Works of Indianapolis. That the Pacific Coast is soon to see the introduction of Diesel type machinery is the word that has recently come to us through a San Francisco firm who stated that the George E. Dow Company was about to place the Williams Diesel type engine on the Pacific Coast market, having accepted or secured the agency. As Mr. Dow was in Europe at the time we learned of this matter we were not able to verify the same from him.

Petroleum Using Boom Abroad?

It looks as though a tremendous boom in oil consumption were about to begin, as, according to the "Petroleum Review" of London, there are more than forty new oil tankers under construction at the present time in England. The paragraph giving this information was so interesting that we quote it herewith:

"Good times for shipbuilders. At the present time, there is no branch of commerce which is responsible for so much activity in steamship construction as the petroleum industry. In this country's various shipyards over forty new oil tankers are under construction, and we learn upon good authority that this activity is so acute that builders cannot be found who will undertake fresh orders for oil tanker building. The present demand for new vessels is striking evidence of the immense proportions which the oil trade has assumed, and everything points to the future being full of good things in this respect, one of the best being the importance which oil fuel is destined to play both on land and sea. We have had liquid fuel firing for marine purposes for many years, and of late many converts have been brought into the fold, but the adoption of the Diesel engine for marine work opens another channel for the consumption of liquid fuel. Truly, oil is king today!"

With the determination of the United States Government to construct oil burning battleships exclusively from now on, a course that will doubtless be followed by other world powers; with the coming extended use of the Diesel engine, which cannot but make vast strides because of its economy (just as the gasoline motor of the present has made extraordinary strides during these last ten years); finally, with the opening of the Panama canal to traffic direct from Europe to West Coast American points, and for that matter direct to the Far East, it looks as though California oil producers, as well as those of Mexico and the Gulf districts, would have all they can do to provide the trade with sufficient fuel, in the not far distant future.

Our First Diesel-Engine Submarines

Our two latest submarines, E-1 and E-2, have two features of novelty, namely, that the motive power consists of Diesel engines, of 520-horsepower, and that the vessels are fitted with a form of folding masts, which reach thirty feet above the deck and will form part of a wireless outfit. The vessels are 135 feet long and each carries four torpedo tubes. As 5000 gallons of fuel oil can be stored, the vessels will have a wide radius of action.—Scientific American.

Esperanza Cons. Oil Company Becomes General Petroleum Company

Details of the organization of the General Petroleum Company, formed to take over the properties of the Esperanza Consolidated Oil Company, show the new corporation to be the owner of 11,000 acres in the prospective and proven California oil fields, together with leases on 18,500 acres in the Mexican oil fields and fifty acres of water front at Tampico port. The Mexican leases run from thirty to forty years, on 10 per cent royalty.

The California holdings are as follows: 1100 acres in Midway, 2120 in Buena Vista and Elk Hills, 335 in Sunset, 979 in Lost Hills, 480 in Belridge, 2200 in Santa Maria, 1728 in Carissa, 170 in Coalinga, 960 in the Kettleman Hills and 450 in the Fullerton district.

The General Petroleum Company is capitalized for $50,000,000, par value of shares $100, with an authorized issue of $25,000,000 first mortgage 6 per cent gold bonds. On the land acquired from the Esperanza Consolidated it has sixty-five producing wells with an output of approximately 6000 barrels a day. The company owns 75 per cent of the capital stock of the General Pipe Line Company, which has a capital of $7,500,000 and an authorized bond issue of like amount. The General Pipe Line Company will build a pipe line from the Lost Hills through Belridge and the Sunset field to Port San Pedro by way of the city of Los Angeles. The pipe line will be six-inch from Lost Hills to Sunset and eight-inch from Sunset to San Pedro, with a capacity of 20,000 barrels a day and will be used to transport the oil of the General Petroleum Company. It is announced that the work of organizing the pipe line company has been finished. Surveys have been completed, rights of way secured and it is expected that the line will be completed and in operation by January 1, 1913.

Following are the officers of the General Petroleum Company: E. J. De Sabla, president; John Barneson, vice-president; Louis Sloss, vice-president; Frank Griffin, W. H. Talbot, J. C. Cebrian, Charles W. Slack, R. R. Colgate, of New York, and Andrew Weir, of London, directors.

Bank Will Pay Dividends

Money to the extent of $300,000 will be put in circulation in Bakersfield and Kern County, generally, on April 1st, when the Kern Valley Bank will pay a dividend of 40 per cent, amounting to the above sum. This bank was closed last year by the State Bank Superintendent owing to the depreciation of the value of the bonds of the Sunset Road Oil Company, leading to a lot of litigation the end of which is not yet in sight. However, another dividend of 20 per cent, or $150,000, is said to be in sight, which will aid in loosening money in the oil districts still further. The money that is ultimately realized from the sale of the bonds of the Sunset Road Oil Company will be paid to the depositors and it is expected that ultimately they will receive back the full amount of their deposits. For awhile it looked as though they would not receive more than fifty cents on the dollar.

Work Started on Midway Gas Company's Pipe Line

The task of constructing the Midway natural gas pipe line from the west side oil fields to Los Angeles began simultaneously at each end of the proposed line about ten days before our going to press. In the west side thirty men began shoveling at daybreak, as did likewise a similar force in Los Angeles.

The force, according to H. H. McClintock, in charge of the Midway work, will soon be increased to 250 men, as it is the purpose of the Midway Gas Company to push the work. Seven four-ton auto trucks will be used in transportation of materials. The big ditch digging machines are due to arrive in Midway in the near future and a private telephone line is under construction for use on the project.

W. B. Gester, Chicago engineer, has completed an examination of the proposed route of the Guaranty Pipe Line Company and says the same is "feasible." A bid to build the pipe line for approximately $1,600,000, from the Midway field to San Pedro, and completely equip the same with pumping stations, has been submitted by the Hope Engineering & Supply Company. The Guaranty has $10,000 on hand.

WEST SIDE BRIEFS
(From Midway "Driller.")

The Combination Midway Oil Company, Section 22, 32-23, has cemented its No. 1 well at 2601 feet.

The Associated is building a camp on Section 20, 31-22. A new rig has just been put up and drilling will begin at once.

The Union has resumed work on its Midway King Pin lease on Section 22, 31-24, on the flat between Buena Vista Hills and Elk Range.

The Buick, on Section 17, 31-24, is down 2940 feet in its No. 4 well. In No. 2 they are working to shut off the water. No. 3 is yielding about 5000 barrels daily.

The California Midway, on Section 32, 31-23, is to start development at once. The California Well Drilling Company has a contract to drill on the northeast corner of the property and is now rigging up.

The Oleum Development Company, on Section 15, 32-23, has cemented at 2845.

The Knickerbocker, on Section 32, 32-24, has cemented off the bottom water and is waiting for the cement to set.

The Midway Pacific, on Section 24, 31-22, has cemented at 1800 feet.

The Caribou Oil Company, on Section 28, 31-23, has reached a depth of 3445 feet in its No. 1 well. There is a strong gas pressure and a good showing of oil.

The Pacific Crude Oil Company, on Section 32, 31-23, is down 2650 feet in its No. 1 well.

The Alberta Midway has just completed a new rig on Section 14, 31-22. The company has one drilling well and four producers on this property.

The K. T. & O. Company has two new rigs and two drilling wells on Section 23, 31-22, and one new rig and three active drillers on Section 15, 31-22.

The Mays Consolidated has resumed drilling on Section 8, 31-23.

On Section 18, 31-23, the Toronto Midway is down 3700 feet in No. 1 well.

The Oakland Midway is getting ready to develop its holding on Section 13, 31-22. A camp is building there.

The Standard Oil Company recently purchased from the Derby Oil Company the west half of Section 16, 32-24. A new camp is being built and thorough development is reported. The transfer price is said to be $50,000 and an agreement to drill on every ten acres within three years. The property is three miles east of town.

The Twenty-five Oil Company, on Section 25, 32-23, is cementing off Well No. 37 today at 2000 feet.

The Midas Oil Company, on Section 28, 12-23, is down 3800 feet in No. 2 well.

The Rialto has reached a depth of 2400 feet in its No. 2 well on Section 34, 12-23.

The Midlands Oil Company is down 2670 feet in No. 1 and 1910 feet in No. 4 on Section 32, 12-23.

A new record for fast drilling has been established by a drilling crew of four men on the North American Oil Company's Mt. Diablo lease, Section 22, 32-23. Twelve wells were completed in eleven and a half months at an average depth of over 1200 feet, during which time 1500 feet of hole was made and 37,000 feet of pipe was handled. From three to four strings of pipe was used in each well. The Mt. Diablo crew claim this is a record unequaled in the Midway or Sunset field.

M. J. Laymance and J. Y. Eccleston, large oil operators of Oakland, who are controlling stockholders in the M. J. and M. & M. Consolidated, have purchased the properties of the Wellman Oil Company, consisting of the southwest quarter of Section 36, 12-24, with all improvements, and the undeveloped quarter of Section 36, 12-24. The purchase price was in the neighborhood of $1,000,000. The undeveloped quarter is just east of the M. J. and M. & M. Consolidated, and the owners have commenced active operations and will drill in four wells at once with rotary tools.

The southwest quarter is just south of the M. J. and M. & M. Consolidated, and has on it improvements to the value of $300,000, consisting of thirteen pumping wells, one 37,000 barrel steel storage tank and one 20,000 barrel steel storage tank, all of which are included in the purchase.

The Southern Pacific railroad has put into effect a reduction of 40 cents a ton on freight charges for hauling oil into Fresno from the Coalinga and Kern County fields.

Oil under the lower rates can now be delivered in Fresno for 7 cents less on the barrel or $20 less on the car. This difference is expected to cause a general reduction in the price of oil in Fresno. From Coalinga to Fresno the rate has been cut from $1.95 to $1.55 a ton.

Rice Ranch Oil Company, in old Santa Maria field, has a 400-barrel well; light oil.

Associated Had Good Year.—Changes in Directorate

Frank G. Drum was made a director of the Associated Oil Company at the annual meeting of the stockholders, held at the company's office in the Kern River field recently. Drum took the place of Burton E. Green, and William Sproule was elected to take the place of Guy Shoup. There were no other changes, and the officers and directors of the company are as follows:

President—W. F. Herrin.

Vice-president and general manager—W. S. Porter.

Directors—F. H. Buck, F. G. Drum, J. A. Chanslor, M. F. Whittier, W. E. Sproule, Rudolph Herold, J. C. Kirkpatrick, R. P. Schwerin, A. D. McDonald.

Secretary—Miss Grace Sheridan.

Despite the depressed condition of the oil business during the past year, the Associated's annual report was most gratifying, showing net earnings of upward of $3,000,000. Some of the figures shown are as follows:

Earnings of the company after deducting operating expenses, maintenance, etc., $4,172,215; less interest on bonds, $687,754; less amount invested in the business and added to the sinking fund, $1,718,215; leaving a net gain to the surplus of $1,766,245.

The item of cash invested in the business, however, includes approximately $1,500,000 paid for oil which is now in storage, and which is therefore as much an active asset as so much cash in the bank.

The matter of declaring a dividend was not discussed, according to one of the directors. The full report will be printed after the custom of the Associated and mailed to the stockholders in about a month. The "Derrick" will cover the report.

Seaboard Oil and Transit Company Absorbs Gate City Oil Company

The properties of the Gate City Oil Company were sold a short time ago to the Seaboard Oil and Transit Company for a consideration of $100,000. The Gate City properties consist of twenty acres of leased land and five acres of deeded land. The townsite of Maricopa is situated in part on the properties. There are twelve producing wells, and the average monthly production is from 12,000 to 15,000 barrels. The Gate City properties are among the best known in the State. Up to this time they have been held by a close corporation of Los Angeles and San Francisco capitalists. The oil is sold to the Sunset Monarch Refinery, which is located less than one-half mile from the properties. The oil ranges from 12 to 14 gravity, but is very desirable for asphalt and road surfacing. It is marketed at 45 cents a barrel, and there are yet to be delivered 110,000 barrels on the present contract. The Gate City property adjoins the Monte Cristo, McCutcheon, Adeline and Fulton. This property has a storage capacity of nearly 100,000 barrels, and all of the wells are in first class condition. Three of the twelve producing wells are flowing from their own gas pressure, and the remainder are pumping wells. Operating expenses are from $500 to $750 a month. The property is earning, net, about $5000 a month.

The Seaboard Oil and Transit Company has already taken possession. There is room on the property for six additional wells, but the drilling of these will not be taken up immediately. The Seaboard Oil and Transit Company was organized the first of the year for the purpose of perfecting the consolidation of fourteen oil properties controlled by nine separate corporations. Of these nine corporations seven have ratified the consolidation, and the remaining two will hold their stockholders' meetings at a later date to act on the merger.

The Jewell Oil Company's shareholders have voted to merge with the Seaboard at the solicitation of their officers, who stated in a letter that the terms given the Jewell were very advantageous. The Jewell was operating thirty acres of land in Kern River. The property is excellent but we understand that owing to indebtedness the company had not kept up the production to anywhere near its normal output, which should average about 7000 barrels per month or more.

Merger of Canadian Companies Effected

The Canadian Consolidated Oil Company is a new concern which was formed for the exclusive purpose of taking over the properties of the four companies following: California King, Canadian Queen, Canada West, Great West. The merger went through without a dissenting voice as far as we have heard. The Canadian Consolidated Oil Company now controls 834 acres of good land. On the Canada West there is a good, light oil producing well. Most of the company's land is in the high gravity oil belt in Tapo Canyon, although it has 120 acres in Santa Paula and forty acres in Templor. The capitalization of the company is 2,000,000 shares. The directors are: J. R. Riggins, A. G. Nichols, A. C. Durkee, William Moore, F. D. McClure. More information later.

Standard Oil Notes

The Standard's 12-inch pipe line from San Pablo to Mendota will probably be completed by the time the "Derrick" reaches its readers. The line is 152 miles in length. The Standard's new asphalt refinery at Point Richmond is now completed and should soon be turning out the goods for market. Standard stock, which was selling on the New York curb about six or seven weeks ago at $145 a share, has gone up to $215 a share and is scarse at that price. The corporation is capitalized for $25,000,000, but with the wonderful future before it the present price is by no means excessive, although the stock is selling at $115 above par.

To Build Pipe Line

The Producers' Transportation Company has started construction work on a 6-inch pipe line from Junction Station to Jerry Slough, which will be fourteen miles in length and will pass through the Lost Hills oil field. This line will beused primarily, it is said, for the transportation of the light oil that the Union has purchased from the Esperanza Consolidated, now the General Petroleum Company.

News from the Spellacy-Thompson Companies in Mexico

Topila Petroleum Company

The Topila Petroleum Company, the property of which fronts on the Topila River, a branch of the Panuco River, about sixteen miles in an air line from Tampico, has brought in a fine well, No. 1, which is now flowing from 1000 to 2000 barrels per day of clean, pure oil; as nice a well as could be desired, and one that gives the desired value attached to any petroleum producing property, making, of course, the success of the company an assured fact. This company is practically a close corporation, being formed by Spellacy Brothers, Thompson and Montgomery as a personal enterprise to determine the nature of their land in this district.

Mexican Premier Oil Company

The Mexican Premier Oil Company's well, on their Soledad property, is now down 1000 feet. The well looks exceptionally good. A very interesting feature in the Mexican Premier's well is that a heavy oil stratum was passed through at a depth of about 400 feet, and since then further indications that the well is being drilled in excellent territory, have been encountered. Good progress has thus far been made. The location was most judiciously selected, the well lying about four and a half miles east of the great Huasteca well that has produced about eleven million barrels in the last fourteen months. Col. Tim Spellacy does not look for a well of this size on the Mexican Premier, he says, and does not want one, as there are not adequate facilities for the care of such a well on the Mexican Premier's property. A well like the Topila Petroleum Company's well, mentioned in the above paragraph, would spell just the kind of success the Mexican Premier's officers would like to score. It would be a great thing for the shareholders also, as the Mexican Premier is not a close corporation.

Col. T. Spellacy has authorized the "Derrick" to publish the company's card in case anyone is looking for a good opportunity to benefit themselves. The "Derrick" management is often asked for a good investment with a speculative future and we feel we can recommend the Mexican Premier Oil Company's stock at this time and do so with real pleasure, feeling sure no money will be lost to any investor. It offers a good opportunity to anyone who can afford to lay his money aside while the drill goes down. We recommend this stock because we believe in the integrity of Col. Spellacy and know his ability. If such a thing as loss occurred, the heaviest losers would be Spellacy Bros., Thomson and Montgomery, who have $40,000 in this venture. We will watch their well with utmost interest, feeling sure of its success. This stock presents a real opportunity, especially to those who may have made unfortunate disposal of their money during the boom times. We feel that Mexican Premier offers, at its present price of 15 cents per share, a very good chance to recoup former losses.

MEXICAN PREMIER OIL COMPANY

Home Office: 577-581 I. W. Hellman Building

LOS ANGELES, CALIFORNIA

Directors and Officers

T. Spellacy, president; E. A. Montgomery, vice-president; W. M. Wallace, secretary and treasurer. Directors, T. Spellacy, E. A. Montgomery, J. D. Thomson, W. M. Wallace, P. E. Spellacy.

We offer stock direct from the company's treasury to persons who can invest now at 15 cents per share. The Mexican Premier Oil Company is capitalized at $2,000,000. Shares non-assessable. Par value, $1.00 each. In the wonderfully prolific gusher belt of Mexico. Controlling about 26,000 acres of land. An exceptional opportunity. Send for prospectus to office of company. This stock is sold only to enable us to develop our properties.

MEXICAN PREMIER OIL COMPANY.

Write today for full information.

SANTA MARIA

BY W. D. MALTMAN

PALMER UNION OIL COMPANY

Big Sale Effected

(Special)—The Palmer Union Oil Company, through Mr. George L. Walker, treasurer, has informed the shareholders of a deposit of $100,000 made by the English company now negotiating for the purchase of the Palmer Union properties as an evidence of their good faith in the matter of carrying out the contract to purchase the entire properties of the company for ten million dollars. Following is the brief announcement of the sale, dated March 29th, which we are able to crowd in only at the last moment:

"March 29, 1912.

"To the Stockholders
"Palmer Union Oil Company,
"Dear Sir or Madam:

"In our report of March 5th, we advised you that your President, Mr. Frank L. Brown, had sailed for England to enter into negotiations for the sale of the Palmer Union properties. Unfortunately, negotiations were somewhat delayed owing to the general coal strike throughout England; however, we are pleased to report that we have received cable advices from Mr. Brown to the effect that the British company, which is negotiating for the Palmer Union properties, has deposited $100,000 as evidence of good faith to carry out the contract.

"We have been further advised that President Frank L. Brown will sail for America not later than April 6th, to complete necessary details connected with this deal."

The letter also conveyed knowledge of the fact that the Palmer Union Oil Company had purchased an interest in the California Liquid Asphalt Co., and that the latter company is now increasing the capacity of the plant to 25,000 tons per annum, so that it assured a steady usage of large quantities of the Palmer Union's oil.

Company's Wells

The report states that Well No. 1, the famous gusher, is now producing 250 barrels per day; No. 2 has been re-drilled and is producing 400 barrels daily; No. 3 is being re-drilled and is down 2600 feet. No. 3 flowed more than 3000 barrels daily before the collapse of the pipe. No. 3 should soon be completed. No. 4 is doing finely—making 1500 barrels per day on the pump. No. 5 has been completed, in 200 feet of oil sand, and has a big gas pressure which forces oil 800 feet up into the well, which, therefore, looks like a big producer. This well will soon be in the pump and if it follows the line of conduct of other Palmer wells, will increase in size steadily until it makes a big production.

Well No. 6 is down 2775 feet. No. 10 is down below the 3000 foot mark. The water has been cemented off and the well should be finished within the next 200 feet. The company expects to have seven wells on production by the middle of May.

Oil Fields Syndicate

The No. 1 well of this company, located on the John Bell tract in the southern end of Cat Canyon, is to be tested for oil at 2650 feet. If the production is satisfactory the well will be finished at its present depth; otherwise it will be carried down until the big pay sand is reached.

Carpenteria Oil Company

This company's No. 1 well, in the southeastern end of the Cat Canyon field, is to be abandoned. The formation below the 2800-foot level presented insuperable difficulties, being entirely different from the main Cat Canyon field.

Princess Oil Company

The Princess well in the Tinaquaic is down 3425 feet with 4½-inch casing. They have passed through formations containing considerable quantities of oil and believe the well close to the producing sand.

Santa Maria Midway

This company's well is 3050 feet deep, 6-inch casing. Going further as there is small indication at the present depth of any proximity to a large oil-producing body of sand.

Dome Oil Company

This company has one of the best properties in the Cat Canyon field, aside from their holdings in the old field. Their production in Cat Canyon averages about 10,000 barrels per month of 16½ degrees gravity oil. All sold. Their well on the Wickenden tract in the Tinaquaic district, however, has a very heavy output of oil, so thick that the well is made to produce with the utmost diffeulty. They are now trying to open it up so that it will produce regularly. One the Gem tract, near Lompoc, the Dome will begin drilling No. 3 just north of No. 1. The oil produced here is around 30 degrees gravity and the wells are usually small producers.

Union's "Bell 5" Falling Off

The Union Oil Company's "Bell 5" well is rapidly decreasing in output, producing at the present time only 450 barrels per day. The well appears to be plugging up again but if it bridges over entirely will be cleaned out by use of the air compressor which it is thought will bring the production back into the thousand-barrel class. The company has one other producer on this tract, Well No. 2, which is pumping 200 barrels per day.

Summit Oil Company

The Summit Oil Company's well is gradually being gotten ready for drilling again. The last section of tubing is being steadily, if slowly, worked out. It is said that a good well should be obtained from the present oil sand formation.

Bradley Canyon Oil Company

This company's No. 1 well has reached a depth of 500 feet at which point the drill is in shale. It is suggested that an oil formation may be obtained at a lesser depth here than in the Cat Canyon wells farther south.

Ideal Oil Company

Work on this company's well is at a standstill. The pipe is crooked and all efforts to straighten it have failed. The tools cannot be run past the crook and bottom water has not yet been cemented off—a case of hard luck.

Santa Maria Oilfields, Ltd.

This company has had excellent success in putting down Well No. 6, which is now in the first oil sand at 2800 feet. No. 2 is looking very good at this time.

Brooks Oil Company

Well No. 2 of the Brooks, in the Cat Canyon field, is flowing through the casing head and pumping over 600 barrels daily. The well is now in excellent shape, apparently free from sand. The oil tests 17 degrees gravity.

New Pennsylvania Petroleum Company

New Penn's Well No. 1 on the Fugler tract is now being tested on the pump and is expected to make a good pumping well. The well is close to Brooks No. 2, and may possibly become a flowing well at any time. In the old field No. 7 is about to be started. If the new well (No. 7) produces well the old rate of dividends will be restored. No. 7 will be located directly between New Penn's No. 6 and Rice Ranch No. 8, producing about 530 barrels of 25 degrees gravity oil daily.

Brown-Walker-Simmons Co.
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Recent Incorporations

American Sunset Oil Co., San Francisco; capital stock, $500,000, directors, J. W. Plant, Albert Hanford, Burt L. Davis, P. C. Cohn, C. H. Kinsey.

United Canadian Oil Co., Los Angeles; capital stock, $2,000,000; directors, J. R. Riggins, A. G. Nichols, A. C. Durkee, William Moore, F. D. McClure.

Tri-State Oil Co., Los Angeles; capital stock, $500,000; directors, Ednah C. Phillips, Fred G. Phillips, E. B. Coil, I. P. Carr, Jos. H. Gosling.

Barstow Parffin Oil Co., Barstow; capital stock, $200,000; directors, Fred Wendell, F. J. Mur, C. E. Kendrick, Rudolph Hann, C. E. Willims, H. D. Butte.

Calabasas Oil Co., of California, Los Angeles; capital stock, $25,000; directors, Melford Steele, H. S. McCallum, Melford L. Willis.

LATEST QUOTATIONS ON THE SAN FRANCISCO STOCK EXCHANGE

The expected increased public interest in oil shares has not materialized as yet to any unusual degree, plainly showing that the public prefers to buy at the top and sell at the bottom. In all probability so many people have been "stung" on poor stocks that they do not appreciate the good purchases now on the market. New Pennsylvania, for instance—an excellent buy at present prices. Another theory for the lack of trading is that the public which purchased shares at the top are holding on to them until the top is again reached or at least until they are dividend payers. This theory is not susceptible of proof but very probably there are numbers of shareholders who are pursuing this course.

The liveliest issue on the San Francisco Exchange recently has been the Palmer, which has been traded in considerably, the prices being around 70 cents. Palmer Union has been selling around prices quoted, 29 and 30 cents, this in spite of the fact that money to bind the sale of the company's properties has been paid in the sum of $100,000. The public doe snot seem to appreciate the assets of this company. Illinois Crude has been selling around 16 cents per share in fairly large batches. W. K. has sold at $2.40; Monte Cristo at $1.35; Neww Pennsylvania at 50 cents; Maricopa National at 24 cents; Yellowstone has been advanced since the assessment from 3 cents to 11 cents, the stock changing hands in fairly large quantities. The assessment enhanced the value of the stock as 520,000 shares belonging to the California Consolidated Oil Company were forfeited. Hence the boost of Yellowstone.

Following is the list of stocks recently quoted:

	Bid.	Asked.
Amalgamated Oil	$59.00	$60.00
Associated Oil Stock	45.00	45.50
Brookshire	.60	
California Midway	.....	.15
Caribou	1.10	1.25
Claremont	.55	.....
Coalinga Mohawk	.50	.70
De Luxe	.75	..
Dominion	.....	.75
Four	.07	.10
Illinois Crude	.....	.17
Kern River	....	8.50
Maricopa National	.22	.....
Maricopa 36	.60	.72
McKittrick	.09	.....
Midway Premier	.32	.75
Monte Cristo	1.32½	..
Mexican Petroleum	53.00	55.00
New Penn. Petroleum	.50	.....
Pacific States Petroleum	.....	.17
Palmer	.68	.70
Palmer Union	.....	.30
Premier	.....	.62
Pyramid	.13	..
Republic	.35	.....
S. W. & B.	.20	.25
Turner	.80	.90
Union	98.00	98.62½
Wolverine	.50	.....
W. K. Oil Co.	2.10	2.25
Yellowstone	.....	.12

Los Angeles Quotations

Los Angeles maintains its interest in oil; most naturally, since the city is dependent on this product for its commercial supremacy of the southwest. Following are the latest Los Angeles quotations:

Producers.	Bid.	Asked.
Amalgamated Oil	$58.50	$59.50
American Pet. Co. (pfd.)	49.00	55.00
American Pet. Co. (com.)	41.50	42.00
Associated Oil	45.00	45.75
Bear Creek Oil & M. Co.	.....	.75
Cal. Midway Oil Co.	.14⅞	.15¼
Columbia	1.08	1.15
Continental Oil	.....	.35
Enos Oil Co.	.03½	.04
Euclid Oil Co.	.....	.34
Fullerton Oil	.....	5.00
Globe	.05	.07
Jade Oil Co.	.....	.17
Mascot Oil Co.	.....	.90
Mexican Pet. Ltd. "Pfd."	83.00	85.00
Mexican Pet. Ltd. "Con."	51.12½	.....
National Pacific Oil Co.	.02⅞	.03¼
Olinda Land Co. (Oil)	.32	.....
Palmer Oil Co.	.68	.77
Penn. Midway Oil Co.	.07	.10
Rice Ranch Oil Co.	1.21½	1.23
Section Six Oil Co.	.....	.05½
Trader's Oil Co.	79.12½	85.00
Union	98.12½	98.37½
Union Provident Co.	98.00	98.12½
United Petroleum	97.75	.....
United Oil Co.	.30	..
Western Union	85.00	103.00
Non-Producers.		
Nevada-Midway Oil Co.	.12	..

Mexican Petroleum Company has declared a dividend on its common stock of $1 per share. Books close April 30th at 5 o'clock, and dividends will be paid to stockholders of record at that time. Dividend checks will be mailed to shareholders on or before May 24, 1912.

The annual meeting of the stockholders of Mexican Petroleum Company, Ltd., of Delaware, will be held on the 9th day of April, 1912, at 10 o'clock in the forenoon, at the office of the corporation, in the Security Building, Los Angeles, Cal.

Rice Ranch Oil Company pays 1½ per cent per share on March 31st. Books close 25th. Amount of dividends paid to date, $162,000.

MARCH DIVIDENDS

Almost three-quarters of a million dollars was paid in dividends by California oil companies in March, as shown by the following table:

Name of Company.	Amount per Share	Total Div. of Company.
Amalgamated	$2.00	$100,000.00
*Buick	.04	127,254.16
Caribou	.025	8,070.30
Central	.015	15,400.00
Claremont	.015	7,500.00
Columbia	.01	9,992.26
Fullerton	.05	30,000.00
Home	.10	7,500.00
Homestake	.01	1,000.00
Mount Diablo	.015	7,500.00
Monte Cristo	.025	12,500.00
New Pennsylvania	.005	2,500.00
Paraffine	.01	3,000.00
Record	.01	10,000.00
Rice Ranch	.015	4,500.00
San Fran.-McKittrick	.10	5,000.00
Sauer Dough	.02	7,500.00
Section 25	.25	10,000.00
Silver Tip	.05	15,000.00
*State Consolidated	.01	5,000.00
Traders	.006	9,000.00
Union Oil	.006	183,387.50
Union Provident	.006	90,787.60
United Petroleum	.006	48,450.60
Western Union	.01	10,000.00
W. K.	.03	15,000.00
Total paid by California companies.		$745,842.42
Mexican Pet., Ltd., pfd.	.002-3	80,000.00
Total		$825,842.42

*Not listed on the exchanges.

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Phones, Sunset and Home

UNITED STATES SUPREME COURT WILL TRY CASE OF BURKE vs. SOUTHERN PACIFIC

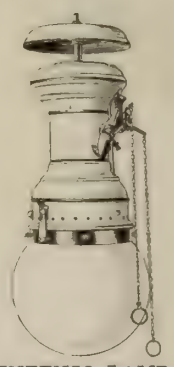
Action of Tremendous Importance.—Circuit Court of Appeals in San Francisco Not Able to Agree

As we go to press we learn that the United States Circuit Court of Appeals has entered an order certifying to the United States Supreme Court seven questions in the appeal of Edmund Burke against the Southern Pacific Railroad Company and the Kern Trading and Oil Company, the Court, consisting of Judges Gilbert, Morrow and Wolverton, not having been able to come to an agreement as to the points involved.

Burke claims a one-tenth undivided interest in mining locations and sets forth that the patents were issued to the railroad company without investigation. The suit involves the title to a large tract of very valuable oil land in the Coalinga oil district, and ultimately to more than half a million acres of oil lands now in possession of the railroad company.

The following are the questions which the United States Supreme Court is called upon to answer: First, did the grant to the Southern Pacific Railroad Company include mineral lands which were known to besuch at the time prior to the date of the patent of July 10, 1894? The second query is whether a patent granted without investigation as to the character of the land operates to convey lands which are thereafter ascertained to be mineral.

The third query is whether the reservation of all mineral lands, excepting coal and iron, is void in the patent. The fourth is if the mineral exception is void, then is the patent open to collateral attack and a conclusive and official declaration that the land is agricultural and that all the requirements preliminary to the issuance of a patent have been complied with. The fifth query asks whether petroleum or mineral oil is within the meaning of the term "mineral" as it was used in the acts of Congress reserving mineral lands from railroad land grants. The sixth query is: Does the fact that the Appellant Burke was not in privity with the Government in any respect at the time when the patent was issued to the railroad company, prevent him from taking a patent on the ground of fraud, error or irregularity in the issuance thereof? The seventh is whether, if the mineral exception clause was inserted with the consent of the defendant, the defendant is estopped to deny the validity of the clause.



INTENSO LAMP
No. 1912

Welsbach Company

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Send for book "The Story of Natural Gas"

A new pipe line company, the "Pacific Pipe Line Company," has been incorporated under the laws of California for $10,000,000 capital paid in, $700. No well known names are attached to the incorporating list of persons. Oil men waver between the questions as to whether the concern, which has made known none of its plans, is a joke or something that may eventually materialize, but not now desirous of publicity. It is hinted that the new company may be a dummy to cloak the operations of large capital.

It is stated that the Associated will build an oil refinery at Port Costa, the estimated cost of which will be $1,000,000—possibly more. This will treat the light oils which the Associated has been buying from various light oil producers. The Associated is at a disadvantage in selling crude oil because while the Standard and Union can get a big profit first by extracting the lighter grades of oil from the crude, and can then sell the residuum, the Associated has been forced to sell crude only thus far. Thus the refinery will be of decided advantage to the company as a money saver. The Associated recently lost the oil tanker, "Rosecrans," which foundered in a heavy sea at Alcatraz.

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Vol. 4 SAN FRANCISCO, CAL., APRIL, 1912. No. 10

The Importance of Oil Well Logs

Written Especially for the California Derrick by Robert W. Phelps, Consulting Geologist.

Why the Log Is Kept

The main idea in keeping the log of an oil well while it is being drilled, is that upon its completion an accurate description of all formations penetrated and the depths at which they occur may be kept in such a form that it may be used for future reference. It is an unfortunate fact that there are few logs that fulfill these qualifications. The primary reason is that one person, most often the driller who is not particularly interested in their use, collects the data as the hole is deepened, for the use of another.

How It Is Most Often Kept

Most logs are derived from the time slips that the driller hands in from day to day or week by week as the case may be. A few are obtained from the driller's private log book after the well is completed. Sometimes they are derived from the foreman's log book. They all have their advantages and disadvantages.

Most time slips leave a space for the driller to fill in which is headed with the brief statement, "Note changes of formations here," and somewhere on the time slip, another brief statement that it is important that an accurate log be kept. Consequently the driller is allowed to enter into the log what he wishes, and his wishes in this respect are scant. Naturally those who try to make use of them later find that many essential details are missing.

Carelessness That Is Expensive

Take for example, the main object of an oil well—getting oil. I have seen the logs of many good producers in which no mention is that there was a showing of oil; and yet there was a showing. Inquiry will often show that the driller knows just where the showing was, and how far down it extended. It is true that there are a few wells that give no positive indication of oil while drilling was being prosecuted, but become good producers as soon as pumping operations begin.

It is not infrequent that when oil is struck, "oil sand" is entered on the time slips for the first few days, then just "sand," taking for granted that those who use these slips know that the showing extended down. Even after a stratum of shale is penetrated no mention of oil is made, though the showing extended down. It is evident that from such a log it is impossible to tell where the sands become barren. Quite frequently bottom waters are penetrated, but not discovered until later, and if the depth of change from sand containing oil to barren sand had been noted, it would not have been out of place to assume the level of the bottom waters and shutting it off would become less of a puzzle problem.

Importance of Noting Water—Noting Formation Colors also Important

Water in formations, whether surface or otherwise, should always be entered in the logs. It is quite frequent to give the water sands of the first well or two, and then it is assumed that that their location is known in all future wells. This assumption has caused the ruin of many a good well, not to speak of whole fields.

There are other details of the strata penetrated that are of consequence to the future development of an oil field. The color of all formations should always be given, this being applied to conglomerates as well as shales. This is sometimes difficult to obtain in thin, hard strata usually termed "shell." The color is a great aid in plotting cross sections of a developed or partially developed field.

Inaccuracy of Measuring Formation Thicknesses

The depths and thicknesses of formations are often grossly inaccurate. There is too much guess work. The depth of the hole is measured on the sand line when the standard tools are used. It is quite frequent that a piece must be removed and the ends spliced together. The length taken out, and the lap in splicing, is in most cases approximated, and this error accumulates as the splicing becomes frequent. Consequently when the old sand line is replaced by a new one, the hole is found to be off in depth as much as twenty-five feet. This error is covered in various ways, and the position and thickness of various strata suffer. It is also a known fact that the bailer becomes wedged in the bottom of the hole, and to loosen it the cable undergoes severe stresses. This stretches it quite appreciably when the hole is deep. The cable will shrink back a part of the strain, but not all, and proper allowances should be made by the driller.

It is a false accuracy to attempt to measure closer than to every foot.

"Making a Showing" and What Comes of It

The accuracy of depths and thicknesses of formations suffer probably the most from the practise of drillers "drilling ahead of their hole." The drillers wish to make a steady showing in depth each day to the city office and too often, especially in small companies, a steady progress in drilling is expected each and every day until the well has reached the required depth. Consequently the days that the driller drills more than is average for that locality, he turns in on his time slip a depth much less than he has attained, and to cover this deception from any official that might possibly visit the well, he enters

on his time slip the formation he is drilling in at a depth less than it occurs. Often drillers are fifty feet ahead of their hole, and I knew of one case in which the drillers were two hundred feet deeper than the city office were aware.

The greatest difficulty in overcoming this practice is to first discover it. Most large companies will discharge a driller for handing in false depths.

A New Time Slip

The cut shows the time slip that would, if properly handled by those in charge, give much better satisfaction; and one that is an improvement over any I have seen in use.

Under the column headed, "Formation," the name of the stratum, such as sandstone, shale, etc., should be written. There are two columns for the upper and lower depths. The column under "color" should be filled in properly. Hardness and the texture can be designated by a check mark under the proper sub-headings. In the columns under "water," "gas," and "oil," the spaces should be checked as "barren" in each case that they do not contain them. If the driller is compelled to check "barren" in all three from the very start of the hole (if they are barren, of course), until he gets indications to check otherwise, he will be more careful in filling them in later when these details are so imperative. Under "remarks" any details not provided in the foregoing columns can be entered.

These time slips should be made out in duplicate and handed into the field office at the end of each tour; the original being sent daily to the city office and the carbon copy kept in the field in the original binding. The office copy should be perforated and inserted into a loose leaf book each day. When the well is completed the log should be compiled and typewritten in a concise form, which should contain all of the details and depths of the strata as given by the driller, also the position and size of casing that is in the well, and dates of starting and finishing drilling. The elevation should never be omitted.

Conclusions

There is one point that should be observed in compiling a log. The log is derived from the time slip and is the conception of the driller, and it should remain so, and not be warpt by others. Let those who use the logs make their own interpretations.

I will grant that it is often difficult to get an accurate log, and often the driller, especially with rotary tools, will penetrate small strata without discovering them, but the point that I have tried to make clear is that the driller does not enter into the log all that he should, and is, in most cases, careless in regard to their accuracy. A company cannot make a geologist out of a driller, but they can ask him questions each day, by having conspicuous blanks on the time slip for each detail required.

DRILLERS TOUR REPORT

WELL	LEASE	DAY OR WEEK	MIDNIGHT	NOON	DATE

FORMATION	DEPTH FROM	DEPTH TO	COLOR	TEXTURE: COURSE	TEXTURE: MEDIUM	TEXTURE: FINE	HARDNESS: HARD	HARDNESS: MEDIUM	HARDNESS: SOFT	WATER	WATER: NONE	GAS	GAS: NONE	OIL	OIL: NONE	REMARKS

WORK DONE

MATERIAL PUT IN

MATERIAL TAKEN OUT

WENT OFF TOUR

DRILLER

CARRYING OIL TO NEWCASTLE

Coal to be Dispacled in World-Famous Coal District

News comes to us from Newcastle, England, that the use of oil as fuel instead of coal is gaining rapid ground, and the announcement is made that the Newcastle and Gateshead Gas Company have decided to instal a new gas oil plant with a capacity for making gas at the rate of 1,500,000 feet per day. This is considered the most extraordinary testamonial to the conversion of the British to the use of oil, of which one can conceive. It uemonstrates to the complete satisfaction of the most pessimistic that oil as a fuel, and for conversion to gas, so far surpasses coal that in this world famous city of Newcastle—where the expression "Bringing Coals to Newcastle", originated as a term that would express the uttermost absurdity possible with which to condemn a project—as far as the displacement of coal is concerned, the "impossible" has happened. Truly "the old order of things changeth"—likewise the old disorder insofar as strikes are responsible therefor.

California Production for and Field Operations During March, 1912

The daily average production of all the fields was not as high during March as during February by some 2,500 barrels, but the total production for the month was 396,066 barrels greater than during February, this being due to two causes; first the greater number of days in March, second, the increased number of wells producing. Consumption dropped almost 6,000 barrels daily in Marcn, which was an off month for shipments.

A peculiar element, and one that we have not heretofore had to deal with every month, has now entered our regular report figures. This is nothing else than the over-estimation of stocks by producers. At least this is the courteous way the Standard's statisticians put it; it looks to us however, as though these producers have probably been drawing from stocks without saying anything about it on account of the effect such action might have in the market for their shares. The "over-estimation" of stocks by pjroducers given in this month's figures totals but 388,500 barrels. Taken along with the 1,616,200 barrels reported last month as over-estimated, a clear 2,000,000 barrels of oil that was supposed to be in storage to the detriment of the market price is removed from a position which it never occupied if the "over-estimation idea is correct. Thus the total storage on March last was but 42,585,868 barrels. A very careful investigation may disclose the fact that there is even less than this on hand. However, it is suggested that it would take a considerable number of million-barrel reductions to bring on any excessive drilling at this time.

The total production during March was 7,289,498 barrels; the total consumption 6,551,765 barrels. It is interesting to note in passing that this is just exactly 1,464,214 barrels greater than the sales during March of last year, which shows the general trend of oil conditions in California. The increase in production of March of this year over February is exactly 388,500 barrels; this little more than neutralizes the "over-estimation" of 388,500 barrels; owing to the lessened consumption however, there were in storage 349,233 barrels more at the end of March than at the end of February, the total storage being given at 42,585,868 barrels.

Just as the fields showed a smaller output for February, on account of the shortness of that month, so do the figures for March display an increase, due to the extra several days. With a few exceptions there is no real increase; this is shown by the daily averages which are smaller for March by 2,000 barrels than for February. The average is pulled down for the most part by the decreased output in Santa Maria, Where 22,593 barrels less was produced this month than last. The differences in the outputs of the various fields was as follows: Kern River gained heavily, producing 126,930 barrels more than in February; McKittrick gained 19,032 barrels; Midway gained 77,687 barrels; Sunset gained 29,528 barrels; Coalinga gained 87,595 barrels; Watsonville 240 barrels; Arroyo Grande held stationary; Lompoc gained 5,900 barrels; Santa Maria lost 22,593 barrels; Summerland gained 965, Santa Paula 1,508; Newhall 1,320; Salt Lake 20,040; Los Angeles 3,335; Whittier-Coyote 1,007; Puente 170; Fulleton-Brea Canyon 29,417; Lost Hills 13,535 barrels of oil. Thus only one field in the state actually showed a decreased output; that field was Santa Maria, as chronicled. Doubtless this is in the main part due to the decrease in the Union Oil Company's "Bell 5" well which gushed so spectacularly for a time at the beginning of the year.

There were 59 rigs completed during the month and 447 wells drilling. The total list of wells produicng was 5,237, exactly 80 more than in February; 58 new wells were completed. Out of 9 abandoned 5 were in the Kern River field. Following is the table giving in more detail the operations during March, but without any comparisons such as have been given in the above paragraphs.

County		Rigs Comp'	Wells Drilling	Wells Producing	Wells Completed	Wells Abandoned	Prod. for Month
Kern River	Kern	4	3	1600	6	5	1,088,875
McKittrick	Kern	7	8	195	6	..	511,782
Midway	Kern	16	143	581	20	1	1,968,633
Sunset	Kern	14	44	220	5	....	447,795
Coalinga	Fresno	5	71	816	7	....	1,640,005
Watsonville	Santa Clara	..	1	5	....	....	3,720
Arroyo Grande	San Luis Obispo	....	1	1	....	....	100
Lompoc	Santa Barbara	..	4	26	....	...	76,300
Santa Maria	Santa Barbara	2	29	158	1	..	471,910
Summerland	Santa Barabra	....	1	122	....	...	5,725
Santa Paula	Ventura	2	31	270	1	..	52,828
Newhall	Los Angeles	....	3	78	....	..	11,070
Salt Lake	Los Angeles	1	11	277	4	1	230,197
Los Angeles	Los Angeles	..	....	413	....	...	36,930
Whittier-Coyote	Los Angeles	...	19	143	1	....	93,337
Puente	Los Angeles	.	1	56	....	....	2,570
Fullerton-Brea Canon	Orange	4	54	261	2	2	532,679
Lost Hills	Kern	4	19	15	5	.	85,042
Salinas Valley	San Benito and Monterey	.	3	..	....	....	....
Repetto	Los Angeles	...	1	.. ..	...	...	.....
	Totals	59	447	5237	58	9	7,289,498

Summary

	Barrels
Stocks, February 29, 1912, previously reported	42,236,635
Less Over-estimation of stocks by producers	388,500
	41,848,135
Production, March, 1912	7,289,498
	49,137,633
Consumption, March, 1912	6,551,765
Stocks, March 31, 1912	42,585,868
Average daily production	235,145
Average daily consumption,	211,347
Average daily surplus	23,798

EXPORTS FROM SAN FRANCISCO DURING MARCH, 1912

The exports during March from the port of San Francisco fell below the February shipments by more than 2,500,000 gallons; and below the export of March, 1911 by 6,803,364 gallons of all kinds of oils. The exports during the first nine months of the fiscal year ending with March 31, 1912, however, are tremendously greater than during the corresponding months during 1911. Exact figures; first nine months ending March 1911, 75,757,699 gallons valued at $1,701,437; first nine months ending March 1912, 121,021,150 gallons valued at $3,131,803. Gain, gallons 45,365,451; value $1,430,366. In other words the gain in shipments was about sixty per cent. and the gain in value close to one hundred per cent during the first nine months of the present fiscal year. If this does not speak volumes for the export trade, nothing would.

The decline or gain during March in quantities and values of the several classes of oils exported, was respectively as follows: Crude, loss, 2,352,105 gallons valued at $34,200; napthas, loss 4,916 gallons valued at $917; illuminating, loss, 3,242,465 gallons valued at $103,287; lubricating and paraffin, gain 18,889 gallons valued at $1,558; residum, gain 2,932,305 gallons valued at $43,101. Summing up we find that the March exports fell short of those in February by a value of $93,745; following is the comparative table giving the exports during March 1911 and 1912 in detail:

COMPARATIVE TABLE SHOWING SAN FRANCISCO'S EXPORTS DURING MARCH 1911 AND 1912

	1911		1912	
Crude	6,949,650	86,450	3,789,105	43,403
Napthas	30,328	5,645	2,145	335
Illuminating	8,469,722	294,478	3,345,815	131,556
Lubricating & Paraffin	15,383	3,306	65,785	11,474
Residum	2,365,585	42,733	2,933,364	43,171
Totals	16,930,578	432,612	10,127,214	239,939

COMPARISON OF THE PRODUCTION AND CONSUMPTION FIGURES OF FIRST QUARTER OF 1911 AND 1912

The production for the first quarter of 1912 is very close to 22,000,000 barrels, being exactly 21,810,188 barrels; the consumption during the same period has been very close behind, totalling almost 20,000,000 barrels, exact figures, 19,919,122 barrels. In round figures, at the end of the first quarter we find that 2,000,000 barrels has been added to storage, with a probability that the proportion will remain constant to the end of the year, which would add 8,000,000 barrels to storage; this provided that the present consumption shows no increase.

The production for the first quarter of 1911 totalled 19,629,341 barrels; the consumption for the same period 15,827,720 barrels. Here is almost 4,000,000 barrels placed in storage during the first quarter of 1911 as against approximately 2,000,000 barrels during the same period in 1912. This isare now trying to act by it.

considered by oil operators the most encouraging feature of the year.

Following is a table showing the production and consumption month ov month and the aggregates for the first quarters of 1911 and 1912, which furnish interesting food for thought:

In Bbls. of 42 gallons each.

	1911		1912	
Month	Production	Consumption	Production	Consumption
January	6,566,180	5,577,946	7,627,258	7,065,372
February	5,973,206	5,162,223	6,893,432	6,301,985
March	7,089,955	5,087,551	7,289,498	6,551,765
Totals	19,629,341	15,827,720	21,810,188	19,919,122

It will thus be seen that the production of the first quarter of 1911 is NOT EQUAL to the CONSUMPTION of the first quarter of 1912 by 289,781 barrels. This fact would seem to indicate that the consumption of 1912 may be greater than the production of 1911, just as was the case for several years previous, when the consumption of each year was greater than that of the production of the year before. The growth of the use of oil is truly phenomenal but the greatest market which the industry can supply and the limit which can be produced have by no means yet been reached. However, it were better to produce for a higher price and produce a little less than to break production records and sell for less. It appears that the producers have at last made up their minds to this fact and

Annual Meeting of Independent Oil Producers Agency

At the eighth annual meeting of the Independent Oil Producers Agency, held in Bakersfield the fore part of the moth, the sixty-eight directors who had been serving were re-elected and seven new directors were chosen to complete the directorate ot seventy-five members as provided for in the by-lays of the Agency; President L. P. St.Clair was re-elected to serve a sixth consecutive term, Stanley W. Morshead was re-elected Vice-President, W. B. Robb was re-elected secretary (seventh term) and M. V. McQuigg was re-elected Treasurer. Captain F. N. Schofield, who resigned from the Agency and consequently was not eligible for re-election to the Executive Committee, was succeeded by J. E. Gillis of the Acme Development Company. The other officers of the Executive Committee were re-elected by the directors with acclaim. The seven new directors elected were: F. C. Berry, M. P. Flickinger, Frank R. McQuigg, J. H. Rainey, A. J. Wallace, E. S. St Clair and W. O. Miles. G. W. Lane of San Francisco was re-elected to act as legal advisor of the Agency. Messrs Speed and Frazier were selected to audit the Agency books.

An interesting feature of the meeting and one that shows the necessity for a different plan than that at present prevaliing in handling the oils, was the request made by Mr. R. W. Dallas on the behalf of the Coalinga Agency members that some arrangement be made for distinguishing the lighter and heavier grade oils in the Agency's sales. This reasonable request was referred to the Executive Committee. Mr. Dallas stated that a large number of Coalinga Companies were producing oil varying from 22 to 34 degrees in gravity and that this oil was sold under the Agency rule at the same price as the lowergrade fuel oil while it should be bringing very attractive prices at the market outside the Agency. Mr. Dallas suggested that the Agency could doubtless arrange to take off the "tops" from the light oil and dispose of the same for refining purposes at a good profit, the same to accrue to the benefit of the producers thereof. Which approaches dangerously near to suggesting that the Agency becoming a refiner; the only way, doubtless, that a full profit could be gained for the producers. In the meantime the Union probably sees the refining oils do not go to waste in the sumps.

An annual statement of the receipts and disbursements for the year ending March 31, 1912, was submitted to the directors by the officers. This very interesing statement showed facts as follows. The average price received per barrel of oil by the Agency members during the past year was 35.7 cents, with a net average of 31.97 cents. Volume and disbursements of oil; Storage credit January 1, 1911, 9,126,320 barrels; net receipts from Union Oil Company, 5,258,993 barrels; net receipts from other agency companies, 9,747,895 barrels. Total volume of oil controlled, 25,132,709 barrels.

Deliveries to Union Oil Company on account of sales, 13,168,497 barrels. Deliveries to Union Oil account transfer, 95,838 barrels; deliveries to other companies account transfers and storage returned, 259,765 barrels. Total disbursements, 14,004,102 barrels. Stocks, December 31, 1911, 10,128,607 barrels. Increase in stocks during 1911, 10,002,226 barrels. This statement does not include oil produced during the year and not accepted into the acounts of the agency.

Summary of net sales, 1911, 13,648,497 barrels for $4,940,887. Of this amount, 8,896,170 barrels have been vouchered to the regular members netting $2,819,673. The balance, 4,752,326 barrels is credited to special sales and less participation coupons paid.

President St. Clair submitted the following report, which met with a very favorable reception:

To The Stockholders of the Independent Oil Producers' Agency:

Gentlemen: Your president, in the past, has never presented a formal yearly statement nor indulged himself in a resume of events during the preceding year. This has been considered unnecessary as you have always been quite conversant with conditions in general, and reports reflecting the financial status of the organization were usually submitted by the secretary. There are, however, two reports that I wish to submit, which in a measure disclose some of the operations of the Agency and which in the past have not been furnished by the secretary. Also some matters to which I desire to call your attention. The reports referred to are those showing receipts and disbursements of oil during the year and the total volume of sales, receipts therefrom, and the various handling charges accruing.

The maximum undertakings in the shape of contracts for the sale of oil to consumers, represents a total of 52,288,722 barrels; the actual requiremnts of which, however, will probably only reach 60 per cent. or 31,373,243 barrels, and of this obligation, also, approximately 25 per cent. expires during this year, 70 per cent. during 1913, leaving only 5 per cent to expire during the following years. With renewals at better prices than have prevailed during the past year and a half (which you are justified in expecting), the average price to the producers will be materially increased. Particularly is this so when you consider the fact that any increase in price, above that which now governs these obligations, reverts almost entirely to the producer and is only affected by the commission to be paid; the transportation charges being fixed and stationary. The discontinuance of storage charges, under the proposed plan to certificate storage oil, will also increase the net returns to the producer. The total of this charge for the year, 1911, as shown in the preceding statement, amounted to $462,842.59, or 3.39 cents per barrel.

During the year your accounting department has been somewhat improved, making it possible to check the many transaction and render intelligent reports.

The statistical work has been enlarged and expanded until today I believe you have the most reliable and comprehensive

collection of data, dealing with the production and consumption of oil, that is compiled in this state.

While the results accomplished during the past year, particularly in the returns to the producer, have not been all that might be desired, continued loyalty to your organization in the future will justify its existence and make possible the end for which it was created—namely, the free and unrestricted movement of the product of its members to the consumer and the highest obtainable market price, unaffected by any influence save that of the law of supply and demand.

L. P. ST. CLAIR, President.

To Aid Development

Under date of April 26, the Oil, Paint and Drug Reporter publishes the following interesting matter:

The United States Senate has passed a bill amending sec tion 2 of the act authorizing the President of the United States to make withdrawals of public lands in certain cases, which act passed in 1910. The object of this amendment is to keep such lands as are withdrawn open at all times for the exploration and discovery, under the mining laws of the country, so far as the supply to mineral, coal, oil, gas, etc., and apply ing such restrictions to the utilization of such lands. The important features of the amendment are contained in the provisos that are incorporated in the amendment known as section 2 as proposed to the existing law, as follows:

Section 2. That all lands withdrawn under the provisions of this act shall at all times be open to exploration, discovery occupation and purchase under the mining laws of the United States, so far as the same apply to minerals other than coal, oil, gas, phosphates, potash and nitrates; provided that the rights of any person who, at the date of any order of withdrawal heretofore or hereafter made, is a bona fide occupant or claimant of oil or gas bearing lands and who, at such date, is in the diligent prosecution of work leading to the discovery of oil or gas, shall not be affected or impaired by such order so long as such occupant or claimant shall continue in diligent prosecution of said work; Provided further, that this act shall not be construed as a recognition, abridgment or enlargement of any asserted rights or claims initiated upon any oil or gas bearing lands after any withdrawal of such lands made prior to June 25, 1910: And provided further, that there shall be excepted from the force and effect of any withdrawal made under the provisions of this act all lands which are, on the date of such withdrawal, embraced in any lawful homestead or desert land entry theretofore made, or upon which any valid settlement has been made and is at said date being maintained and perfected pursuant to law; but the terms of this proviso shall not continue to apply to any particular tract of land unless the entryman or settler shall continue to comply with the law under which the entry or settlement was made: And provided further, that heerafter no forest resrve shall be created, nor shall any addition be made to one hertofore created, within the limits of the States of Oregon, Washington, Idaho, Montana, Colorado or Wyoming, except by act of Congress.

Standard Oil Company Developments

Owing to the size and variety of operations of the Standard Oil Company it is impossible to entirely cover the known events each month, much less the happenings which go unchronicled, but we have some news, good and bad, which will be on interest generally; same follows:

On the corner of Bush and Sansome Streets, San Francisco, the Standard's new building, which will house their offices from the time of its completion, is progressing rapidly in erection. It is to be a very solid structure, evidently put up to stay, like the character of the Standard itself. The steel used is very heavy, much more so than is ordinarily the case, and is being put together with extra caution and firmness. The whole framework is now erected but work has not yet begun filling in the walls. The building will look somewhat like the Sheldon Building, where the Standard is housed at present, when completed. A photograph of the building as it will appear when constructed was published in the last June number of the California Derrick, at which time plans for the construction of the new edifice were made public.

Bad news comes from the P. Yriarte rancho in the La Habra Valley where the Standard's well has attained a depth of over 4,000 feet and has finally run into bottom water, according to the latest and most believable reports. This undoubtedly means the loss of the well unless the reports have been misleading. It is claimed that the well plastered up inside and if any oil formations were passed through they were so thoroughly covered with the mud in the hole that there was no discovery and operations continued until the bottom water was reached. It might be added that with this hole go the expectations of many speculators and independent concerns that were building their hopes on its success. The Standard lost its rig at No. 6 well on section 26-31-23, Midway, by fire. The rig was a total loss. A new one is being erected.

The Standard has put up a new rig on section 10-32-23. On section 36-31-23 the company has a new well which is flowing 250 barrels under strong gas pressure.

The Standard has struck a very heavy flow of gas on its Deroy and Sill lease, on section 16-32-24, at a depth of 470 feet. The flow was through the eighteen-inch stovepipe casing and was at first estimated at 55,000,000 cubic feet per day. Since then it is said to be doing 63,000,000 cubic feet daily. The well was being drilled with standard tools and the heavy cable was cut to pieces by the sand, rocks and gas, dropping the tools to the bottom. The heavy gas flow at this depth is unusual. The well is on the south slope of Buena Vista hills, three miles east of Taft. The company is drilling its No. 2 well in the same section. The last report is that the gusher his quit and will be converted into an oil well.

The Standard recently struck another huge well in its No. 4 on section 36-31-23, Midway. The gusher sand was not expected at that depth—2500 feet— and no preparations had been made to control the flow. The well flowed through the ten-inch casing and spouted high above the derrick. A conservative estimate placed the flow at 30,000 barrels daily. The day after coming in, the well sanded up. The new well is a short distance west of the Standard's big well on the same section, a mile from the pump station. Standard's luck has been excellent in Midway.

LONG TALKED OF SUIT STARTED AT LAST

Government Versus Southern Pacific Railroad will be Interesting Contest. Huge Wealth Involved

The following description of the Government's suit against the Southern Pacific Railroad Company to recover (ultimately) some 440,000 acres of lands granted the railroad years ago (as heretofore described in the "Derrick") is taken from the report of the Oil Reporter's correspondent in Los Angeles and gives a clear, concise view of what is taking place, covering the important points to be brought up in the case:

The long-talked-of suit of the government against the Southern Pacific Railroad to quiet title to lands granted to the railroad on alleged misrepresentation by the latter has been begun in Federal Judge Welborn's court room in the Federal building in Los Angeles. The title of the case is the United States of America vs. the Southern Pacific Company, the Kern Trading and Oil Company, Homer S. King, trustee, and others. The defendants are represented by C. R. Lewers of San Francisco, and J. W. McKinley, of Los Angeles, and the government is represented by W. H. Mills, Assistant Attorney General, and A. I. McCormick, United States District Attorney.

The point the government will attempt to prove is that the railroad company knew that the lands in question, which are located in and near the Sunset-Midway oil fields in Kern county, contained oil before they made application for patent and therefore misrepresented the matter in securing patent. The lands were patented in 1904 and were supposed to be "agricultural" lands. The government reserved in their original grants to the railroad all minerals excepting coal and iron, and were granted primarily for agricultural purposes. As water is very scarce in that section of the State these lands were never considered as having any value whatever, until the discovery of oil in Kern county about seventeen years ago. This put a different aspect on the situation and everything for miles around was considered "prospective" oil land.

Expert testimony will be introduced by the government to show the oil-bearing or mineral character of the land, and about seventy-four witnesses have been subpoenaed by the government attorneys. It is believed the railroad will insist that the lands are in reality suitable for agricultural purposes, and also that when patent was applied for they were not known to contain oil. To anyone who has seen the lands the "agricultural" argument settled at once for a large part of them. They are absolutely barren of any vegetation for the greater part of the time, and topographically are entirely unsuited for any such purposes. As to the second contention that they were not known to contain oil when patent was applied for the government experts who have so far testified say that it was a matter of common knowledge, or at least a matter of common belief, that the land was oil bearing as early as the year 1900, which was four years before patent was granted. However, as has often been stated, the only way in California to find out a piece of land in oil territory is to drill a hole down and prove it, and this point will no doubt have to be decided on the testimony of so-called experts, and "expert testimony," as everyone knows, is a purchaseable article.

Under an agreement the government is given until May 30 to put in its testimony, the defendants then have sixty days to reply and the government has thirty days in which to put in its rebuttal, so all the evidence will not be in before August 30.

Whichever way the case is decided in the district court, it will be carried up and will be finally settled in the United States Supreme Court, and it will probably be several years before a final decision is rendered. In the meantime it is causing considerable comment as to whether during all these years the railroad will be permitted to continue to take oil from the lands on which it is operating, some of which come under the present case. If the railroad is not restrained there are some who think that it will make little difference how the case is decided, so far as the oil is concerned. Oil fields do not last forever.

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The Oil Authority of the Pacific Coast

Published Monthly

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The * *Derrick's ** Creed**

The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's oil industry, to which it is dedicated, for the promotion of truth and in the aid of progress. For science, humanity and honor.

LIVES THAT COULD HAVE BEEN SAVED

We are well aware that a publication of the nature of the California Derrick is not supposed to discuss happenings outside of its realm, yet when such a tragedy as has occurred since last we appeared, the greatest known tragedy of the sea, is so vivid in our minds, and when our hearts go out in sympathy to the sufferers of the wreck of the Titanic, we feel that we will be forgiven for expressing that sympathy. It is not alone to those who died that the heart should warm; it is to the survivors who will carry to their graves the terrible recollection of the foundering of the Titanic, and more than all to those who lost their nearest and dearest, that consideration should be shown and sympathy given. One of the greatest heritages that the American nation has ever been given is the knowledge that the American men WERE MEN in the crucial hour. So were the ships crew, most of whom were British; thus American and Great Britain are drawn even closer than ever before by this terrible disaster; this disaster which need not have happened had even a little care been exercised. And speaking of the ships crew, a big majority of the army of stokers would have been alive today had the Titanic been an oil-burner; the exact proportion we do not know, but it would have totalled into the hundreds. Thus could life have been saved by the use of oil as fuel. And, had the Titanic been propelled by Diesel engines, the saving of life would have been still greater, as still fewer would have been employed in the hold. Aside from its money economy the use of oil is humane. When oil displaces coal it saves the lives of coal miners and lessens the number of those employed in dangerous occupations. So once again, aside from the money consideration, we say, "For Humanity's Sake, Use Oil!"

* * * *

IMPORTANT STATISTICS

We wish to call especial attention to the statistical reports in this issue, the quarterly report on production and consumption, with the comparison showing how 1912 consumption for the first quarter exceeds 1911 production for the same period, and to the export report. These three paragraphs are well worth the attention of the oil men who are interested in a higher price—and who, among them, is not?

* * *

DISAPPOINTED AGAIN

With oil down in price to the bottom for a considerable period, with a large transportation business, a large production from its own wells, a market for every barrel of oil it could produce and all it has purchased, the Associated Oil Company, after the most prosperous year in a prosperous history, has once again passed the opportunity to justify its existence to those who have purchased its shares, by not declaring a dividend. As a sop, so to speak, the officers of the company hand the shareholders a beautiful line of soft talk about constructing a refinery with some of the surplus money. And so the shareholder, the man who has bought stock in good faith, again is "left in the cold". Of course the refinery will be built—there is no question about that—but its construction ought not be used as a "buffer" against dividends.

It doesn't look right. Associated could easily afford to pay at least a small dividend, say four per cent. per year, mere savings bank interest, to the shareholders. It is possible that the company serves its present master's interests to the uttermost by paying good salaries to the officials and selling to the railroad of which it is almost if not quite a subsidiary. But its mighty hard on the shareholders looking for returns from dividends rather than in-again-out-again sales and purchases. We are disappointed in Associated.

ABOUT DIVIDENDS

There is a grocery woman around the corner and she "delivers the goods." Within the space of three years she has bought her shop, which cost $1,000, paid for it, and has earned from it $1200 a year for the succeeding two years. Although there are stores on each corner near her and others in the center of the block, she has worked so industiously and well that her trade has paid more than 100 per cent. per year. Her operations in the realms of finance not being on a large scale, and the woman being a woman instead of a corporation, she has not been molested in her work. If this woman were an oil corporation, instead of a single individual, and if she were capitalized at $25,000,000, and by extraordinary industry had been able to pay even as much as 50 per cent. after a number of years labor, a scream that could be heard the length and breadth of Christendom would ascend to high Heaven from the newspapers of this country; and further, investigations, raised taxes, unfair discriminations, would probably follow the hue and cry. Manifestly, it is unfair. We wonder if this thing shall continue—if it shall be the law, in course of time, for any aggregation of capital to be honuded out of business when, after years of labor, investment and the exercise of extraordinary wisdom, the payment of dividends is begun. If oil companies pay large dividends, they ought to; the risks should yield a higher return.

* * *

EXPLODED FALLACY

For fifteen years the newspapers of this country have been busily engaged day by day in muck-raking those whose industry, genius, or parentage, or all three, have endowed them with more than average wealth. No past that has not had the searchlight of shame turned on it, whether deserved or not. No character of prominence that has not been sullied by slurring remarks insinuating deepest moral turpitude, when there was nothing tangible to grasp. The popular novels have as invariably made the monied man a villian and a thief. It is doubtless the fact that abuses of unusual proportions have been perpetrated to have called forth this remarkable anti-wealth tirade; but that every man with money is necessarily a thief, a craven and a cur is not so. That this is definitely proven no greater example could be given than that of the noble American men of wealth who perished with their poorer brothers on the Titanic that the women and children might be saved. Noble Americans! They proved that even though they did have money they were not cowards, not cravens, not curs! They proved themselves REAL AMERICAN MEN!

* * * *

A Sign of the Times

The president of the Baldwin Locomotive works at Philadelphia has reported that in the past five weeks 65 railroad

companies have asked for quotations on 93 oil burning engines, and from this he draws the conclusion that the coal miners strike has forced the operators of roads that have no great stored supply of coal to seek other fuel. It is only a match that shows which way the wind blows. Between California and Mexico the whole world will yet be served with oil.

* * *

Oil Engine Equipments for Deep Sea Ships

There are at present some fifteen ships under construction in European yards for deep sea service, which will be driven by Diesel engines. The ships vary in size and power from 10,800 tons with 3,500 horse-power to 2,200 tons with 1,100 horse-power. The most powerful engine is a 4-cycle, single-acting installation containing twenty-four 24.8 inch cylinders, the total horse-power being 6,000. These engines will be installed in a cargo and passenger vessel of 8,500 tons.—Scientific American.

Water Evil Meeting Attention

That the Oil Men's Protective Association means business is shown by the following dispatch appearing in the Oil World May 1st, dated from Taft, the Midway "metropolis."

Water Commissioner W. N. Forker has plugged Opal well No. 3 and is taking the same action with No. 2. Both these wells will be abandoned. Also he has plugged the California Seaboard's well, which will be abandoned.

These wells have been producing water for years, the Opal's No. 3 probably for five years. It was drilled into the bottom water, which was never shut off, and has had as much to do probably, with the entrance of water into the formation of 25 Hill as any other well. The company is abandoning the lease altogether, because it has never got any production, but nevertheless it is paying the expense of putting the holes into a condition where they will do no further damage. The lease abuts upon the Talara, given up as unproductive by the Standard months ago.

Other Wells Doomed

Half a dozen other wells in that neighborhood are to be treated with the same process immediately by the water commissioner, who is gathering data and making cross sections of the formations to aid him in the work.

An interesting story is told of two companies with adjoining leases in the neighborhood which is to the effect that both have had water for some time but that each manager has accused the other of being responsible. That being the case no progress was made by either in shutting off the water and it continued to trouble both. Now, however, since the formation of the Oil Protective Association, which has given its moral and financial support to the water commissioner, the two gentlemen in charge have agreed to submit their difference to that official and abide by his decision with the understanding that the one found in error will proceed to correction.

BIG SUIT ON

"Jim" Yancey and Theodore Barnsdall at Outs

Possession of 4000 acres of oil land is involved in a ten-million dollar lawsuit which began in the United States district court shortly before we went to press, when T. N. Barnsdall of Kern County filed his bill in equity against the Petroleum Production Company of California and J. C. Yancey, alleged controlling factor in the company. According to the complaint Barnsdall and Yancey, prior to March 12, 1910, were joint owners of a half interest in a certain leasehold interests and mineral claims in Kern and San Luis Obispo Counties, F. E. Drake owning the other half. Barnsdall, being willing to advance money for the development of the property, it is alleged, was allowed by Yancey to have two-thirds of the property. Subsequently, when the Petroleum Production company was organized in Nevada, it was agreed to deliver to Barnsdall two-thirds of the capital stock, and he obtained a lien to insure delivery. The defendants, it is alleged, failed to deliver the stock. Barnsdall now seeks to foreclose the lien.

An excellent pocket map of the Midway-Sunset field has been compiled and issued by Alfred and A. B. Abbey, of Taft. The map shows location, drilling and producing wells, gas wells, wagon roads, pipe lines, idle and water wells, storage tanks, etc. This map sells for $1.00.

H. A. Thomas, of the Midway Premier, Kalispel and other oil properties, has been elected chief officer of the Kern County Oil Protective Association. The association has begun active work to relieve the injury and danger from water. Col. T. H. Minor is treasurer of the association. Water Commissioner Forkner is co-operating with the association, and many of the operating oil companies have pledged their assistance. That much benefit to the industry will result is beyond question.

With the Supply Men

Wonderful Record by South Chester Pipe

Think of hanging seventy-seven and a half tons of steel four-fifths of a mile long by one end, the same free in the hole the entire distance to the bottom, and you have a mental picture of the 8 1-4 inch string of South Chester Iron Casing weighing 36 lbs. to the foot, in the Union Oil Company's No. 3 well on the Bastanchury Ranch in the Coyote Hills near Fullerton. This remarkable achievement, that is, hanging this steel pipe 4,300 feet in length from the surface of the ground without mishap either to the hole or to the pipe itself, speaks volumes for the tensile strength of the pipe. In fast, as far as the "Derrick's knowledge extends, this is the longest continuous string of casing in any oil field in the world. In round figures the weight of this casing from end to end is 155,000 pounds! The ten-inch string in the same well is also a record-breaker, or at least has few parallels, being 3610 feet long and weighing 40 lbs. to the foot, in all 144,000 pounds. The South Chester people, who are represented on this coast by Woods & Huddart of San Francisco, can well afford to point with pride to the product of their own manufacture after showing signally what the steel really is and what it really will do. When the Union completed Bastanchury No. 1, at a depth of 4444 feet, the inside string was only 2 1-2 inches in diameter. This well was a heavy producer , even through this small pipe but when a string of tools was lost in cleaning the hole, their recovery through this small opening was impossible and the enormous investment represented by a well of this depth was totally lost. The inference is obvious.

The Double Improved Under-Reamer

The Union Tool Co. have just issued a pamphlet dealing with the notable features of the well known "Double Under-Reamer." The pamphlet is well illustrated with cuts showing the reamer expanded as in operation, set for entering the pipe, bottom view of the reamer, showing massiveness in construction, the tool when the cutters are removed and a side view showing the wide cutting surface of the cutter. All oil operators and drillers know the "Double" so there is no object in our entering into a detailed description of it. But a line to the Union Tool Co., Los Angeles, will bring the pamphlet to those interested. The pamphlet contains testimonials from users of the "Double", comprising all the foremost oil companies in California.

"D. & B." Pumps: An Exposition

(Written for the California Derrick by S. K. Burgess.)

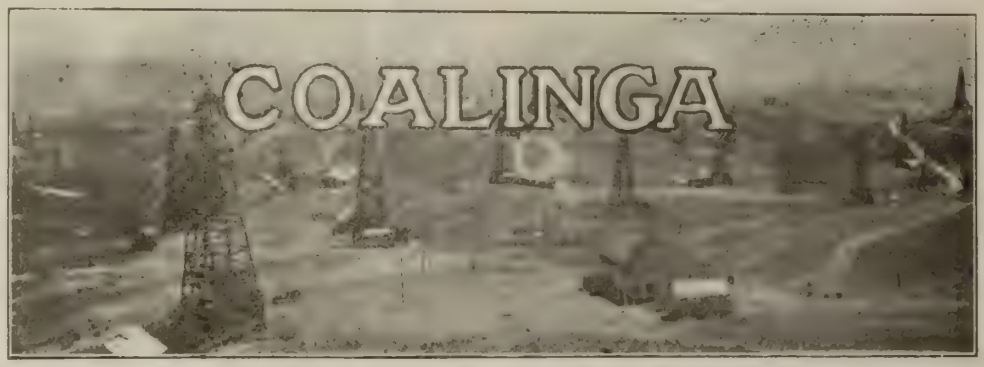
The inside of a pump must be bored out absolutely accurate. To bore out a SOLID BARREL six feet long would require a boring bar twelve feet long. A boring bar twelve feet long, small enough to go through the liner, absolutely cannot keep from springing. The tool will follow the hole in the casting which is never straight, thereby making it necessary to use tapering plungers which are in reality too small. The plungers will work hard not because they fit the pump but because they bind in the barrel. The hole cannot be true because the boring bar has sprung out of line.

The first stroke of the pump the sand gets between the plunger and the barrel. The plunger grinds the sand into the barrels and the barrel grinds the sand into the plunger. Before long both the barrel and plunger are worn out, the well crew pull out the pump and throw it on the junk heap. It is good for nothing and in the way. If the well is near a canyon they pitch the barrel down the canyon to be "cussed" b ya teamster when he is grading for a sump hole, after the production has been increased by the use of D. & B. Perfect Fitting Pumps.

The D. & B. Pump has six liners inside which can be renewed. How they are cast, cooled, turned, fitted and assembled will be explained in a later article.

The case wherein the jurisdiction of the Interstate Commerce Commission over oil pipe lines, involving a number of "fine" legal points, is to be considered, will come up for trial May 10, the date of isuance of this magazine. The outcome will be chronicled in the next issue.

The Indian Refining Company, a subsidiary of the Royal Dutch-Shell interests, will begin marketing its products in two or three months. All its goods, it is said, will be brought here from its Sumatra and India refineries and no California products will be handled. The company has established distributing plants all along the coast, and it is also reported to have secured several of the most competent salesmen from its rivals here—the Union and the Standard.



The News from This Field is Written By
GUY H. SALISBURY—California's Best Known Oil Correspondent

SPECIAL SUMMARY OF EAST SIDE OPERATIONS

Along the east edge of the developed field the only companie now actively operating are the Coalinga Mohawk, on section 12 and the W. K. Oil Company, section 2, 20-15; the Standard on section 36, the California Oilfields on sections 26 and 14, the Kern Trading and Oil Company on section 11, and the Continental Petroleum of America on section 2, 19-15. The Pulvadero, section 2, 21-16, have suspended operations; the Coalinga Anticline failed to start drilling, awaiting the development of adjacent property; the Southeastern Limited, section 18, 20-16, suspended operations over one year ago; the report, previous to suspension, placed the depth of the hole at 4,100 feet, with 100 feet of oil sand; the water was claimed to be shut off at 3,490 feet with the 8 1-4 inch. The territory is deep, but promises a light oil. The successful operations on section 12, 20-15, by the Coalinga Mohawk suggests the pay sand in the Southeastern to be at about 4,600 feet; their hole was left in fine condition. The well of the Wilcox Oil company, located in the northeast corner of the southwest quarter of section 12, 20-15, is over 4,630 feet deep with heavy 4 1-4 inch casing. The last report showed a strong gas pressure the odor of which suggests a very light oil. The pitch of the formation, as indicated by the wells of the W. K., the Mohawk and the Wilcox, will indicate about 4,600 feet for the Southeastern to the pay sand. The Wilcox well will be completed in a short time, unless there should be any mechanical trouble in the hole, which will give evidence of conditions and value of the lower sands on the extreme east edge of the field.

DESCRIPTION OF LOST HILLS AS IT IS TODAY

By Guy Salisbury

The Lost Hills, Kern County, with the post ouce name of "Cuttens", is situated on the northwest quarter of section 2, and the northeast quarter of section 3, T 27 S, R 21 E., M D B and M. Lost Hills has been growing steadily since 1910. It has the typical frontier oil town look. At the present time there are two general merchandise stores, a furnishing store, two hotels, three restaurants, one pool hall, four saloons, two livery stables, one garage, one galvanized iron tank building etsab lishment and three barber shops. There are about 20 frame dwellings and a number of temporary buildings constructed of galvanized iron, tin and canvas. Likewise there is a spirit of confidence manifested among the residents that has in part been acquired by the agricultural interests in the immediate neighborhood of the town site. This is shown in the fact that the Miller & Lux Company, the largest single land owner in Kern County, have five traction engines plowing, that cut 50 inches each "gang"; the land will be sown to Egyptian corn. The Miller & Lux Company have two large dredgers at work along the Tulare swamp, not far from Goose Lake, bringing water in on this land. The company has a large acreage that will be reclaimed and irrigated that lies about 4 miles southeast from the townsite of Lost Hills. There are now about 150 men employed by the land company in this reclamation work, and fully 5000 acres of Egyptian corn will be put in this section; the gang plows are being run day and night.

The oil interests about the camp are showing up a little better. Wells are being drilled into the sand by several of the big companies. This agricultural enterprise, on so large a scale, by one of the greatest land companies in California, has greatly encouraged the property owners of Lost Hills, who look for a wave of prosperity as soon as the railroad project now on shall reach the town of Lost Hills.

WILL DRILL DEEP TEST WELL ON WEST SIDE

Messrs. A. E. Webb and Carl Baker issued a call to property owners along the west edge of the west side field recently, to consider the drilling of a test well to reach the lower sands. The meeting was a success; a number of property owners and oil men were in attendance at the Growlers Club at the appointed time. Mr. Baker has long held the opinion that a lower sand existed under the prolific sands drilled into on sections 12, 14, 23 and 26, T 20 S, R 14 E. The success of the Standard well No. 80, section 28, 19-15, although drilled some six miles northeast from the center of section 14, has suggested similar conditions existing under the latter section, as there are indications in the hills due west from the sections mentioned, where the out croppings are exposed. At the meeting representative men of the west side were present. A. P. May, who owns the west half of section 14, 20-14, offered 20 acres to the company, which will be a close corporation, for the purpose of drilling the test well. B. Einstein, of the First National Bank, represnting the San Joaquin Coal Mining Company, offered 20 acres on section 22, or on section 23. Communications were received from the Ozark, the Traders and the Arizona Petroleum, who are favorable to such a paln and would become interested. The discovery of a deep sand of light oil along the above territory would add a large acreage to this field and the development already made by the Standard on section 28, and by the companies drilling on the east line of section 2, 21-14, fully warrants the undertaking, which will be in good hands, as Carl Baker is better acquainted with that section of the field than any other man.

Coalinga Midland

Manager H. R. Crozier of the Coalinga Midland Oil Company, owning thenorth half of the southeast quarter of section 10, 19-15, reports that operations will be resumed next month. Well No. 1 was drilled to the depth of 1,600 feet, the formation being mostly brown shale, very similar to that passed through by the Standard paraffin well No. 80, on the north line of section 28, 19-15, distant two and a half miles southeast from the Midland. The outcropings on section 9, 19-15, would indicate a depth of about 2,200 feet to the Standard sand, as the Midland well lies further up on the formation. It is now the general belief of oil men, who are familiar with the formation to the west of the developed lands in this field, that this paraffin sand, struck by Standard No. 80, outcrops along the several breaks back, to the west, of the east side field, and as several companies are now preparing to develop for this and it will not be long before the value of this strike will be known.

Blair Resumes

The Blair Oil Company, section 14, 21-15, has resumed operations on well No. 2. At the time work was suspended, during the latter part of January, the well had been bailed down and the water was found to have been shut off. The 6 5-8 inch heavy casing was landed at 4,307 feet, the formation being a stiff blue shale, an ideal capping over the oil sand. The sulphur-water sand was passed through at 4,232 feet. The 4 1-2 inch casing is being set in and the well will now be drilled to pay sand, which it is expected will be encountered

at about 4,440 feet, as indicated by the pitch of formation. This well will determine the value of a large territory lying just south of the west side field.

Coalinga Crown Oil Company

Coalinga Crown Oil Company, section 30, 19-15. Well No.1 had a little pipe trouble, since relieved. At 3,005 feet the bit had entered the oil sand 45 feet; the 4 1-2 inch casing has been pulled, 200 feet perforated and the pipe replaced. The manager will pull some of the 8 1-4 inch casing and save the pipe for the next well. The well is gasing and when bailed down 100 feet the gas pressure will flow the water, mud and oil up over the casing head. The well is "looking good."

United Development Company

The United Development Company, section 19, 20-15, with three wells producing, have now on hand, in storage on property, about 15,000 barrels of oil. On section 17, 20-15, well no. 1 is 2,560 feet deep with 8 1-4 inch. The 10 inch was landed at 2,500 feet. The manager expects to shut off the water with the 8 1-4 inch at about 2,840 feet; the pay sand will be entered at about 3,000 feet. The present indications suggest the completion of the well about June 30th.

Canadian Coalinga Oil Company

The Canadian Coalinga Oil Company, section 18, 21-15, well No. 1 is a steady producer. Since the lower joint of casing was perforated the well is averaging a little over 200 barrels per day of high grade light oil, free from silt and water. The company is shipping the production to the Union Oil Company by tank cars over the Southern Pacific, this month will deliver fully 5,500 barrels. The gas pressure is again very strong but it is not interefring with the production.

California Oil and Gas Co.

California Oil and Gas Company, section 6, 21-15. Well No. 1 has been off production for some time but maanger Beverage has overcome the trouble, having cleared the hole of damaged tubing, replaced some bad joints of casing and will have the well producing this week. Well No. 1 was completed at about 2,645 feet and was the best producer on the property.

Dominion Oil Company

Dominion Oil ompany, section 7, 23-17, Kings County. Well No. 1 is 2,640 feet deep with 6 1-4 inch casing. The formation at this depth is hard gas sand, showing some light oil up through 2,000 feet of water. The hole is in good codition. Superintendent Warner is prepared to go to 3,000 feet if necessary. A change in formation is looked for any moment.

Coalinga National Petroleum Company

Coalinga National Petroleum Company, section 8, 20-15. Well No. 1 is back on the beam producing about 100 barrels per day; oil appears to be free from water. After a hard-luck period superintendent Harvey Anderson has overcome the water and pipe trouble that has been on for about one year.

Walsh and Chandler

The Walsh and Chandler well ,on the south line of the southeast quarter of section 8, 20-15, is about 2,290 feet deep, 8 1-4 inch casing; the 10 inch was landed at 2,000 feet; the 8 1-4 inch will be carried to about 3,010 feet; the pay sand will be reached at about 3,100 feet; the hole is in good condition.

Coalinga Eight

Coalinga Eight Oil Company, section 8, 20-15. Well No. 3 had the 6 1-4 inch casing collapse and after considerable trouble the superintendent has the well in hand and will free the hole of the bad pipe in a few days.

New York Coalinga

New York-Coalinga Oil Company, section 6, 20-15. The rig that was blown down during the high winds of March has been rebuilt, the belt house and engine house have been re paired; company is now ready to resume operations.

Vancouver-Coalinga Oil Syndicate

Vancouver-Coalinga Oil Syndicate, section 14, 20-15. Well No. 1 is 4,245 feet deep with 6 1-4 inch casing. The formation now is a tough blue shale, muddy and very slow drilling at that depth.

Premier Oil Company

Premier Oil Company, section 24, 20-14. Well No. 1 has been redrilled and deepened. The water that recently broke into the well above the lower sand, will be shut off. The well will soon be on the beam again.

K. T. O. Installs Electric Lights

The Kern Trading and Oil Company have installed electric lights through all drilling rigs and pumping wells on the west side property, lessening the danger from fire where lanterns are used, and making it far more convenient for the working crews.

Nevada Petroleum Company

Nevada Petroleum Company, section 18, 20-15. Well No. 50, drilling in the northwest corner of the section, is standing cemented; the water was shut off with 8 1-4 inch at about 2,750 feet; will stand until about the 15th of May.

Coalinga Security Oil Company

Coalinga Security Oil Company, section 8, 20-15. Well No. 1 is on the beam again, making about 200 barrels per day, sand troubles making it necessary to run the beam very slow.

Completed Rigs

The Kern Trading and Oil Company have completed a heavy standard rig in the northwest corner of section 33, 19-15, and are ready for the drillers. The W. K. Oil Company, section 2, 20-15, have completed two new rigs on the west line of the property.

General Notes

There is no longer any "Associated Transportation Company". It has been dissolved and all its properties have been acquired by the Associated Oil Company, of which it was a subsidiary. Thus it is no longer a "common carrier". Its property is the property of the Associated—as such it cannot, in all probability, come under the direct supervision of the Railroad Commission having to do with "common carriers". The Associated Transportation Company ceased to exist February 29, 1912. There was no change that we are aware of except in the name.

Listed in New York

One million three hundred thousand dollars convertible 6 per cent. bonds, $12,000,000 non-cumulative 8 per cent preferred stock and $31,986,200 common stock of the Mexican Petroleum Company, limited have been listed in the New York Stock Exchange, on official notice of issuance of permanent engraved certificates.

"Everybody's doin' it" — "Doin' what?"
"Competing with Standard Oil."

The Star Drilling Machine Co., will build an extensive plant at Long Beach the coming summer in order to supply the Pacific Coast trade.

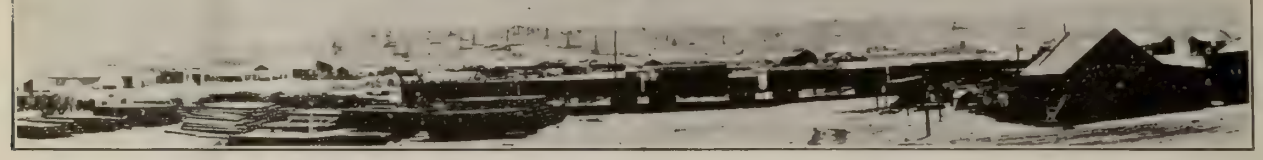
Deeds have been recorded in Bakersfield showing the transfer of Lost Hills oil lands from E. R. Dudley and two others to B. T. Dyer, field manager for the Esperanza Consolidated Oil Company and by Dyer to the company o fthe following described property: The southeast quarter of the southeast quarter, the east half of the southwest quarter of the southeast quarter and the south 38.8 acres of the north half of the southeast half of the southeast quarter of Section 4, 27-21.

The Universal Oil Company is putting in a water pipe line to Lost Hills which will insure good water for the town and fields. The water is taken from the artesian well twelve miles east of the townsite from which water for the town is now hauled. From the well to the slough, about six miles, the grade is down and along this stretch wooden pipe is being laid. This pipe is constructed of staves, wrapped with wire. From the slough the water will be pumped through an iron pipe to Lost Hills, and beyond as far as to Section 32, 26-31. This is an expensive undertaking and will mean a lot to the territory.

Another Suit

Another oil company's affairs are in fair way to be aired in the courts and some one is likely to come out of the case with tarnished reputations. This time it is the Buick Oil Company that is under fire on allegations made in the complaint of B. F. Moffit, a stockholder, against D. D. Buick, J. W. Miner and Fred Van Orman, the promoters of the company. The fact is, in connection with the Buick Company, that its well No. 1 has been for nearly a year one of the sensations of the State. About two months ago its No. 2 came in as a 10,000-barrel gusher and has been doing in excess of 5,000 barrels a day until last Tuesday, when it suddenly subsided, and is now producing nothing. In the meantime No. 1 was lost by water breaking into the sand, so that now the company has no production. The company is drilling another well, and is down 2,750 feet, but for the present at least the property is non-productive. Whatever may be the conditions of affairs within the company itself, however, it is conceded to have a very choice piece of oil territory.

SUNSET-MIDWAY-McKITTRICK



Any thirty days in the Midway field, no matter how "quiet" the times may be, is replete with stories of everyday occurrence which never enter the publications devoted to the oil business for a variety of reasons; because they are not heard of, because those who know of them do not care to make them public and because they are not of sufficient general interest to receive writing up. The same is true of all the West Side fields, but especially of Midway because of its vast size. Therefore, we do not pretend to give a review of exactly what has happened during the month day by day; we can only chronicle those events of such general importance that they are known throughout the fields and so reach us, and the special maters about which we make particular inquiry; little events, unimportant events, sometimes even events of larger significance must escape us; but the latter do not often get by. Our reports of happenings of lesser importance must necessarily be brief.

During the month of April there was considerable new work done in the fields extending from Sunset on the south to McKittrick, Belridge and the region thereabouts on the north. While we have not yet, of course, received the report on production etc. for April, Midway led the state for March, as shown in the regular statistics; an advance in production throughout the state, due to the length of March over February, was apparent, and Midway shared it.

From the point of view of many operators in Midway the most pleasant feature or dream of the month was that brought into prominence by the decision of certain public spirited citizens of Maricopa and Taft to boost for a road from Taft as the center of the West Side of Kern County directly over the mountains into Ventura County and down to the Coast, the proposed route to be about sixty miles in length, with but one mountain range to scale, an easy grade, and through a scenic country, thus making the Coast about four hours ride from Taft and from Los Angeles about six hours by any medium speed automobile, and eliminating the disagreeable desert route from Tehachapi. Ventura County pledged $40,000 for such a road last year and has prepared data showing how very desirable the road would be and the approximate cost thereof. Ventura County, it is thought, would undoubtedly construct this road, at least to the county line, if Western Kern County would complete the project; which it probably will. The road will be a great benefit to traffic into the West Side and a boon to oil men generally. Another matter of big interest to oil men in the same general way is the rumor, (it can scarcely be called more than that) that the Western Pacific Railroad will come through the West Side fields and down the west side of the San Joaquin Valley, enroute to Los Angeles, and that it will cross the mountains probably somewhere back of the Taft region and run into Ventura County, thence into Los Angeles through (probably) Oxnard, Ventura and Santa Monica, from which point it is said the Western Pacific would run on the right of way of the "Malibu" railroad.

The Midway Gas Company has made a good start on the pipe line from section 8-32-24 to Los Angeles and already have several miles of ditch dug.

At our last hearing the ditch had been completed as far as San Emidio siding, rapid progress having been made with the big "ditcher". One hundred feet of the five and one half foot ditch has been opened in twenty minutes as the big machine eats up space. On the flat the ditch will not exceed three feet in depth. A tunnel is now being dug under the railroad track at San Emidio siding. J. A. Pollard has been employed by the Honolulu Consolidated Oil Company to drill gas wells on the Honolulu's Buena Vista property against the gas company's needs. Mr. Pollard will start work at once, using rotary tools for the sake of the greater ability which the rotary process offords in counteracting the gas pressure.

The California Counties Oil Co. has purchased the LaBelle property on section 4-32-23. It consists of eighty acres on which there is one producing well and another nearing completion. The price paid was $3750 per acre.

The new company is composed of San Francisco and New York capitalists. H. M. Bacon is the manager.

The Burks Oil Company, and its lessor, the Bay City Oil Company, have ceased operations on section 32-32-23. Notice of relinquishment of the property has been filed.

The Caribou Oil Company has just finished its No. 1 well on section 28-31-23 and has a fine producer. It was completed at 3440 fet and began flowing 1800 barrels daily of 25 gravity oil. A fair showing of oil was struck between the 3100 and 3200 feet, but it was decided to go deeper, an dthe result justified the work. Considerable trouble was had from the heavy gas pressure.

The Midas Oil Company, on section 28-12-23, is putting in a string of six-inch casing, wihch will be landed on a hard shell at 3865 feet.

The Triune Oil Company has reached a depth of 4050 feet on section 34-31-24, on Buena Vista flat two miles west of the lake. The work of testing the well is in progress. There is a heavy gas pressure and showings of oil were had in drilling.. The hole was kept full of water to prevent its blowing out. The well will be watched with interest, as no producers have yet been developed in that locality. Mayor Jas. Rolph, Jr., of San Francisco, president of the Triune, recently visited the property on an inspecting trip.

The Rico Oil Company, on section 23-32-23, is installing an electrical process to rectify the emulsified product that comes out of its wells with the oil. The process to be used is that of the Petroleum Rectifying Company. After investigating different methods, the Rico management decided on the one mentioned, as it appears to give the best satisfaction and its operating cost is low.

Engineer Howard has begun the erection of the plant and will have it running very soon, ten days or so. It will handle 500 barrels daily of the Rico Oil, which is of 14 degrees gravity and contains 30 per cent of emulsified water. The plant will be operated by power from the S. J. L. & P. corporation's lines.

The Rico plant is the first of its kind in Midway. Its work will be watched by oil men with interest. Superintendent Riley of the Rico feels assured that it is just what his property needs.

The Cheney-Stimson Oil Company, on section 23-32-23, finished its No. 6 well at a depth of 1173 feet early in April. The well was started on the morning of March 16th, and was completed in the record-breaking time of nineteen days. The new well is a 200 barrel producer. It is the company's sixth on production, the total output being 16,000 barrels per month. The oil goes to the agency, and is considered to be the cleanest and of the highest percentage of oil of a corresponding gravity. The property adjoins the Dunlop, the Indian & Colonial and the Traders.

The Mays Consolidated Oil Company, operating on 28-31-23, has brought in well No. 2. It produced at the rate of 2500 barrels for a few hours but decreased in flow to 2000 barrels per day. The well was brought in last fall but had to be redrilled. The big flow was struck at 2975 feet. The Kline Oil

Company, a new company, is preparing to drill on section 31-32-24, south of the Edmonds Midway. A new rig is up and boilers and machinery have been installed.

The Honolulu Consolidated has struck a gusher in Well No. 4, on section 14, 32-24, which is now flowing about 5000 barrels a day. The oil is of 27 gravity. The gusher is 3150 feet deep and is under control. There is considerable gas in the output.

A gusher has been developed in Lakeview well No. 8, on section 25, 12-24, a quarter of a mile east of the great gusher, since deceased. The flow is 3000 barrels a day of 26 Baume. The well is 2377 feet in depth.

The K. T. & O. well just west of Taft, and within the city limits, has been put o nthe beam. A 200 barrel production is expected from it. The Boston Pacific, section 32-31-24, is down 3050 feet and expects to reach the oil sand in another 100 feet.

The Kalispel, section 5-32-23, has completed its No. 3 well at 2531 feet. It was put on the beam and there is every promise of its being a good well.

Concentrates

The Honolulu has now put its well No. 4 on sec. 14-32-24 on production and it is now flowing from 2500 to 3000 barrels of light oil daily under heavy gas pressure. The K. T. O. has just put up a new rig on section 7-32-24. The Pacific Crude has reached a depth of 30- feet in its first well on section 32-31-23. The California Midway, on section 32-31-23, is drilling its No. 6 well. The work is being done by the California Well Drilling Co. A depth of 800 feet was made the first week.

The General Petroleum Company has contracted with the California Well Drilling Co. to put down a well on section 32-32-24. During an electrical storm recently lightning struck a 55,000 barrel storage tank on the property of the American Oilfields Company, on section 36-31-22. The wooden cover of the tank caught afire but the flames were extinguished by employees before great damage was done. The Rex Midway, on section 8-31-23, has resumed drilling its No. 1 well. the depth is now 3160 feet. The General Petroleum Company, (formerly Esperanza) has four wells drilling in its Holloway division, section 25-32-24. The Company's American Midway division, section 32-32-24, has four strings of tools running. One well is producing.

The Sibyl division of the General, section 22-32-23 has just installed a Trumble refining plant to extract the water from the emulsified oil. The California Counties Oil Company, recent purchaser of the LaBelle, section 4-32-23, has reached a depth of 2890 feet in its No. 1 well. The 8 1-4 string will be landed between 2900 and 2950 feet. The Canadian Pacific Oil Company, of B. C., Ltd., section 4-32-23, landed the 8 1-4 casing at 2186 feet two weeks ago. The well has now been tested and it was found that the water is completely shut off. Drilling has been resumed and the oil sand is expected to be reached at 3100 feet. The Pacific Crude Oil Company, on section 32-31-23 is down 1100 feet in its No. 6 well. Three hundred feet was drilled in the past week. The Mays Consolidated, on section 28-31-23, is down 2900 feet in No. 2, and 2600 feet in No. 3 well. The Engineers Oil Company, on section 14-31-22 has completed No. 3 well at a depth of 1800 feet. It is flowing 300 barrels daily of 20.7 gravity. M. H. & M. Oil Company, on section 15-31-22, has brought in its No. 1 well at the shallow depth of 630 feet. It is going 200 barrels on the pump. The Midway Gas and Petroleum Company, on section 14-31-22 has two wells on production, and is now rigging up for No. 3. The Edmonds Midway Oil Company, on section 32-32-24 is down 1200 feet in No. 2 well and 900 feet in No. 3. No 1 is yielding 1800 barrels daily.

The Toronto Midway, operating on section 18-31-23, cemented recently and have closed down while the cement is hardening so that work can be resumed in safety. The company is contemplating starting No. 2.

LOST HILLS

The Standard Oil Company has tapped a good oil sand in its first well on the northeast corner of section 4-27-21, at a depth of 2080 feet and will cement off the water with 6 1-4 inch casing. (It is said the oil is of a very high gravity, 39 degrees.)

Near the north line of section 5-27-21 the Universal has drilled an experimental hole which shows the rapid dip of the oil strata to be to the west from the Lost Hills anticline. The well, known as the Natoma, went through the first oil strata between 2100 and 2600 feet and has been cemented at 3100 feet. The formation indicates a dip of at least 1000 feet in little more than half a mile from the Standard's well on section 4.

Ben. B. Dudley of the firm of Dudley & Dudley, real estate operators and oil magnates, confirms the report that his company has made a rich strike in the Lost Hills country. Martin V. Dudley discovered Lost Hills. The strike was made very recently at a depth of 1014 feet, but as the company was not in a position to handle the oil the well was immediately capped. At the present time the oil is seeping through the capping and the prospects are bright for a regular boronza. The oil is said to be 35 gravity. The well is located in the N. E. corner of section 4, 27-21.—"Midway Driller."

To Drill in Carissa Plains

The McKittrick Western Oil and Land Company has been organized to operate the Carissa plains, where it has considerable holdings. The company was incorporated at San Francisco, its principal place of business, with $100,000 capitalization. The directors are Alice B. McDonald, N. Jasper McDonald and J. N. Isham of San Francisco; John D. Hoff of Oklahoma and Frank Brophy of McKittrick.

The Guaranty Pipe Line Company has secured a franchise through the corporate limits of Santa Paula and entura. Its application for a franchise through Kern county will be acted on May 22 and through Ventura county May 15. Engineer Core is finishing the last levels on the survey and, according to General Manager Cox, the destiny of this enterprise will be definitely settled after these matters have been decided. The Guaranty, at this time, however, is said to be abont ready to be adjudged bankrupt.

General Petroleum Co.

A $25,000,000 mortgage from the General Petroleum Co. to the Mercantile Trust Co. of San Francisco has been recorded in Bakersfield. The mortgage covers 2655 acres in Midway field and Carissa Plains and a large amount of stock in several companies. The transaction was made to increase the company's capital from $7,500,000 to $25,000,000.

The General Pipe Line Company, which is subsidiary to the General Petroleum Company, is understood to have let a contract to the National Tube Company for 168 miles of 8-inch pipe for its line between Los Angeles and the West Side oil fields. The contract was let in the east.

The General Pipe Line Co. has its Los Angeles office in the Higgins Building. The General Petroleum, the parent concern, has made an agreement with the General Pipe Line Co. whereby if it fails to deliver a certain amount of petroleum for transportation that the pipe line company may enter upon all lands now owned and controlled by the first company in the Midway, Sunset, and Lost Hills fields and supply and deliver into its storage tanks or pipe lines, the petroleum agreed upon.

It is stated that one of the largest fuel staions ever installed in any harbor will be built at Los Angeles harbor by the General Pipe Line Co., at a cost approximating $1,000,000, if the government will grant the company a concession permitting the same. General Petroleum Company has recently leased the south half of section 8-29-22, McKittrick; purchased at $750 an acre, 1,800 acres in the Belridge district, leased the south half of section 6-29-22, and eighty acres in section 12-29-22, besides ecquiring the Delaware Union property in Fullerton and other producing properties. All of the holdings will have operations started upon them in the near future.

Electricity for Belridge

A party of officials of the San Joaquin Light and Power Company made a trip to the Belridge territory recently to look over the proposed route for a light line from McKittrick to the Belridge country. It is the purpose of the company to run a power line to the new oil fields to furnish electricity for drilling and pumping wells on the various leases. The Santa Fe and the General Petroleum Companies are the larger users of electricity for these purposes, although many of the smaller companies are insalling motors and preparing to use the new methods in preference to the old.

Still Another Withdrawal Order

By recent order of the President, a small tract has been withdrawn in the McKittrick fields. The lands included are: 1-2 of NE 1-4 sec 1; N 1-2 of SW 1-4 sec 2; N 1-2 of NE 1-4 sec. 3; N. 1-2 of NE 1-4 sec 4, all in twp 30, r. 22 east.

WEST SIDE BRIEFS

(From "Midway Driller")

The M. H. & M., drilling on section 15-31-22, struck a pocket of gas in its No. 2 well at a depth of 615 feet.

Onsection 13-31-22, the Oakland Midway has reached a depth of 1052 feet in its No. 1 well.

The Fairfield Oil Company is down 450 feet in its No. 2 well on section 13-31-22.

The Kalispel's No. 3 well, on section 5-32-23, came in last week in April and is making 200 barrels daily.

No. 4 well on Midway Five Oil Co. on section 5-32-23 is nearing compeltion at 2400 feet. No. 5 is down 1503 feet. No. 1 is being redrilled. Nos. 2 and 3 are producing.

The Section Twenty-five Oil Co., on 25-32-23 is down 2044 feet in No. 37 well, and 1680 feet in No. 38. There are twenty-four active producers on the property, and two idle wells.

One string of tools is running on the Indian & Colonial property on section 22-32-23. Sixteen wells are producing and two are idle.

On section 5-32-23 the Hale-McLeod Co., has 1450 feet of ten-inch hole in its No. 9 well. There are four active producers, yielding 25,000 barrels per month.

The Buick, on 32-31-23, is fishing for a string of tubing and cleaning out its No. 2 well. No. 1 is still out of commission. No. 4 is down 2940 feet.

The Standard's big well, No. 4, on 36-31-23, broke loose Thursday and flowed 12,000 barrels and then sanded up.

Nos. 2 and 3 wells of the Edmonds Midway, section 32-32-24, are each down 1100 feet. No. 1 is producing 1800 barrels daily.

A small gusher has resulted from the redrilling of the Tamalpais Oil Co's. No. 2 well on esction 25-32-23. The string in the well had collapsed. It was pulled and the well redrilled to the former depth of 1367 feet and screen put in. As the string was being lowered the oil spouted through the tubing over the derrick. It is making 250 barrels a day. In No. 1 the water has been shut off. It was drilled too deep, the water being struck at 1680 feet. The hole has been plugged and the oil sand will be tapped at 1608 feet.

Don't Know About It Yet

A correspondent of the Tampico "Times", writing from Panuco, gives the following paragraph: "All we know of rev olution here is what we read in the newspaper. There was never a more quiet section and business goes on as quietly as it would in the states."

It is very greatly to be hoped that that is as much as the oil district of Mexico will know of the revolution. Great losses to oil operators might occur if the war zone were transferred to Tampico. It is thought there is very little danger of this occuring.

Elk Horn Oil Company will pay its next dividend on May 15. The dividend will be one per cent.

The Midway View Oil Company is negotiating with the United Canadian Oil Company for the transfer of the property to the latter concern. The Midway View owns 15 acres in the La Habra Valley directly west of the Standard's Yriarte lease and if the sale goes through will use the proceeds in developing its La Habra holdings.

The Union Oil Company is said to nave taken over the property of the Coronation Oil Company in the Sunset-Midway field and will finish the well which was shut down on attachment proceedings.

The Industrial Oil Company, one of the largest operating concerns in the Fullerton field, has changed ownership. The purchasers are the Associated Oil Company. The price is given as $750,000. The property is at present producing 65,000 barrels of oil a month.

The Dixie National operating in the Sespe district, entura County, has just brought in a 150 barrel well at 2,700 feet, one of the best wells in the field. Cosmopolitan well No. 4 reached the sand at 3,300 feet and is now 3,460 feet. The Mutual Company's latest well is 3,300 feet, and is showing nor a big producer. These holes are the deepest ever drilled anywhere in Ventura county, and on th results finally obtained will depend deper drilling generally in the Ventura county pools.

The Casitas Ranch, in the Rancho Santa Ana, five miles north of Ventura, is to be developed for oil, as a deal amounting to $250,000, details of which will be given later, has just been concluded.

The Calumet Oil Company, near the Montebello wells at Fillmore, recently got a "sand" at 110 reet depth. Heavy oil and plenty of gas.

The Midway Premier Oil Company has renewed its contract with the Standard Oil Company at 55 cents per barrel. The contract calls for 250,000 bbls. delivered at the rate of 700 barrels a day. The former contract price was 45 cents a barrel. It is said this company will soon resume dividends.

General Notes

The California Liquid Asphalt Company at Hadley and the Ensign Baker Asphalt Company of Santa Maria are operating to their fullest capacity in filling orders. The former has begun work on a 20,000 ton order to be supplied during the present year. The crude material is received from the Palmer Union property by rail, and two trains daily are required to transport the supply. The Ensign Baker Company has received a lorge order from the San Francisco Paving Company. The material is supplied from the Brooks well in Cat Canyon.

The New York Central & Hudson River, Delaware & Hudson and New York and Ottawa Railway companies installed oil burning engines on their Adirondac runs for the protection of the forests at the behest of the public service commission of New York on May 1.

At the annual meeting of the shareholders of the Mexican Petroleum Company, Ltd., (of Delaware), recently held in Los Angeles, E. L. Doheney was elected President and the other old officers retained in their various positions. The Company's prospects at present, as shown by the report made the shareholders, inventories as follows: Lands owned and controlled byt the company, 600,000 acres. Value of same $73,000,000. Contracts unfulfilled for delivery of oil, 55,000,000 barrels; value of same, $26,000,000. A fleet of tank ships, a host of gigantic concrete reservoirs, innumerable steel tanks of great capacity, a network of pipe lines and an extraordinary production are the other assets of the company aside from its brilliant selling, producing and development organization. From now on they will pay $1.00 quarterly on their common stock. This is equivalent at the present selling to 7 per cent. annually.

Brown-Walker-Simmons Co.

AGENTS

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News from this District Written by
W. D. MALTMAN

Palmer Union Oil Company

As was first given to the public exclusively through the "Derrick" in our last issue, the Palmer Union Oil Company has been sold to London interests for a consideration of $10,000,000, on which the sum of $100,000 as earenst money has already been paid to President Frank L. Brown, who represented the Palmer Union in the negotiations. A special dispatch from the East, where Mr. Brown now is, gives the information that this money will be forfeited within a certain stipulated time limit if the purchasers fail to make a further payment of $675,000, which will bind the sale absolutely. Mr. George L. Walker of the Brown-Walker-Simmons and Palmer Union Oil Companies has stated his belief that there will be no hitch in the sale as the purchasers have been very anxious to acquire the property, the English evidently appreciating the value of oil producing territory of such high grade and productivity as the Palmer, which has deep sea transportation, etc., and the oil of which is excellent both for refining into asphalt and as fuel; especially valuable because of the extraordinary growth of the demand for oil which is generally believed in England, on account of the Diesel engine, will expand extra ordinarily within the next five years, theperiod during which the Panama Canal is to be opened to interoceanic traffic. The "Derrick" had hoped to give an interview with Mr. Frank L. Brown in this issue but as he has not yet returned it is impossible at this time.

Santa Maria Oil Fields, Limited

Santa Maria Oil Field Ltd., adjoining the Palmer-Blochman tract, is getting into the pay sand with its No. 6 and expects to have it completed within a short time. This well is just over the Dome line and is in a promising location. The Los Alamos No. 1, on the tract recently brought in by this company, is showing up in great shape. For the past month the well has produced around 500 barrels daily after nearly two years of fruitless effort to get it opened up and from all appearances is established as a steady producer. A quantity of distillate was used to liven up the heavy oil to start action, resulting in a flow which up to date has caused no trouble. This well is one of the best demonstrations of the adversity to be encountered in Cat Canyon, and the results to be expected after the hole has been put in good condition by constant working off of the heaving sands.

New Pennsylvania Petroleum Co.

The New Penslyvania Petroleum Co. spudded in its No. 7 on the main field tract, on the 1st of May. This well is located midway between the famous No. 6 which has produced consistently 300 barrels daily for the past three years, and the "late" Rice Ranch well, a 500 barrel producer. This promises to be one of the best light oil producers on the field according to the surrounding wells, and the management will expedite its completion by every available means. In Cat Canyon Fugler No. 1 is showing up well. The well continues to sand up when cleaned down to the bottom, but each repetition finds it freer of the bothering sand. The hole is in good condition and should soon be on a steadw pumping basis.

Pinal Oil Co.

Pinal Oil Company is preparing to cement off Fleisher No. 2 at a depth of 1800 feet before drilling deeper. Every precaution has been taken to prevent the water getting in the hole as it did in No. 1, causing its final loss, and up to date both the 12 1-2 inch and 10 inch strings of casing have been cemented when landed. In addition the company is doing some new work in the old field. A notice has been issued to the stockholders of a meeting to be held in June for the purpose of deciding on the issue of increasing the capital stock to $2,000,000, the money to be used in extensive development work. The company has a large area of inviting territory as yet undeveloped and this plan is proposed to increase its productive holdings. The possibility of again paying dividends is good as the company has accumulated a large cash balance since the last dividend was paid. A total of nearly a million dollars has been disbursed among the stockholders to date.

"Bell 5" Quits Temporarily

Union Oil Company has lost its Bell No. 5 temporarily owing to sanding up after several months of phenomenal flowing. The well produced nearly 750,000 barrels of 17 gravity oil in six months before it gradually chocked up and will probably resume its big ow when the hole is cleaned out with the air compressors now working. This well is close to the south line of the Palmer.

Santa Maria Oil Fields Syndicate

Santa Maria Oil Fields Syndicate, operating the John Bell property, is drilling its No. 1 at 2790 feet. A live sand encountered at 2670 feet was promising enough to warrant a test but the management decided to continue through to the underlying sands before making a test. The drill has passed through two highly saturated oil sands and the outlook for a new strike is promising.

Santa Maria Midway

Santa Maria Midway Oil Company is drilling in the Tepusquet at a depth of 3200 feet. The latest report indicated a highly encouraging gas and oil showing in the brown shale at this depth. The hole is deeper than the depth at which the sands are usually struck in Cat Canyon and this feature is the only drawback to a fine prospect.

Brooks Oil Co.

Brooks Oil Company is getting splendid results from Well No. 2 after having cleansed out the lower hole to free it from sand. With the aid of an air compressor the well is now producing over 500 barrels daily and the oil tests 14.5 gravity, the best to date. The Brooks is finding a ready market for its production as fuel oil for other Cat Canyon producers, and in its shipments to the Hadley refinery, in which it owns an interest. Several car loads of oil are shipped daily.

Princess Oil Co.

Princess Oil Company has resumed operations in the Tepusquet after a lay off of several months. The well is down 2500 feet with a good showing of gas in the shale, and the sands are expected within a short distance. On the Muscio tract, No. 1 has a temporary delay for the purpose of changing the light 4 1-2 inch casing to a heavier string of pipe. The casing was damaged by the blow in the formation, necessitating a more solid preventative.

Summit Oil Co.

Summit Oil Company has succeeded in getting its well free of the broken off tubing and is again on bottom at 2640 feet, ready to test the sand. The 6-inch has been landed and a perforated liner will be used so as to insure against any damage to the hole should drilling have to be continued after the test. From all indications this shallow sand is of a producing thickness and every effort will be made to get the well to pumping.

Bradley Canyon Oil Co.

Bradley Canyon Oil Company, on the Muscio property west of Fugler's point, is down 500 feet with 15 inch stove pipe casing. Several delays have made the drilling to date slow and the surface sands have not yet been passed.

Ideal Oil Co.

Ideal Oil Company is making another effort to cement off the water sands encountered below the 150-fool stratum of oil sand. A plug of cement at the lower 50 feet of the hole is to be used.

Latest Quotations on the San Francisco Stock Exchange

Oil is "picking up" on the San Francisco Exchange a little again, as evidenced by the higher prices prevailing in a number of cases and by increased sales in other instances. However, the interest is not very great, the raised values really not what they ought to be and the sales small, while the business has never offered a better time to purchase excellent stocks than is the present. Associated continues to jockey up and down, Amalgamated sells for more money, Mexican Petroleum sells for more money, Union stays at par, the usual number of smaller companies fluctuate as usual, and good stocks which sold at three times their present prices two years ago, are practically "off the board". Still, oil is picking up a little. Its in the air. When this money stringency is past everyone will want to buy at once. More companies are going back to a dividend basis and doubtless this will tend to increase interest all over the country. Following is the list of San Francisco stocks recently quoted:

COMPANY	BID	ASKED
Amalgamated Oil	58.00	
Apollo		.05
Associated Oil Stock	45.00	47.00
Associated Bonds 5s	102.00	104.00
Bay City		.85
Brookshire	.60	.65
California Midway		.14
Caribou	1.20	1.30
Claremont	.60	.65
Coalinga Central	.05	.10
Coalinga Mohawk		.75
Coalinga National	.15	.20
Cresceus	.02	.08
De Luxe	.75	
Dominion		.75
Empire	1.17½	1.25
Enos		.08
Four		.10
Illinois Crude	.10	.15
Junction		.27
Maricopa 36	.64	.75
Mascot		.90
Mecca		1.25
McKittrick	.09	
Midway Premier	.54	.55
Monte Cristo	1.37½	1.40
Mexican Petroleum	68.00	68.50
National Pacific	.02	.04
New Penn. Petroleum	.49	.50
Palmer	.63	.65
Palmer Union	.31	.33
Premier	.60	.60
Pyramid	.05	.05
Republic	.35	.44
Rice Ranch	1.20	
Sacromento		1.00
Sauer Dough	1.12½	
Section 25	22.50	
Silver Tip	.90	
Sovereign		.90
S. W. & B.	.20	.25
Sterling	1.40	
Sunset Monarch		1.10
Turner		.95
Union	100.37½	100.87½
United Oil	.25	.29
Wolverine	.80	.90
W. K. Oil Co.	2.17½	2.25
Western Union		.97
Yellowstone		.12

Los Angeles Quotations

COMPANY	BID	ASKED
Amalgamated Oil	58..0	60.00
American Crude Oil Company	.10	.14
American Petroleum Co (com)	45.50	47.50
Associated Oil	46.00	47.50
Bear Creek Oil & M Co.		.50
Brookshire Oil Company		.62½
California Midway Oil Company	.12¼	.10
Central	1.00	1.80
Columbia		1.10
Continental Oil Company		.35
Enos Oil Company		.10
Euclid Oil Company		.34
Fullerton Oil Company	2.00	
Globe	.04	.05
Jade Oil Company	.10	.13½
Maricopa Queen Oil Company	.18	.30
Mascot Oil Company		.90
Mexican Petroleum, Limited "Pfd"	95.00	100.00
Mexican Petroleum, Limited, "Com"	68.00	68.50
National Pacific Oil Company	.02¼	.02⅝
New Pennsllvania Petroleum Co.	.50	.60
Olinda Land Co. (Oil)	.40	.41
Palmer Oil Company	.61	.63
Pennsylvania Midway Oil Company	.07⅜	
Perseus Oil Company		.15
Piru Oil & L. Company	.21	
Rice Ranch Oil Company	1.24½	1.27
Trader's Oil Company	75.00	81.00
Union	100.50	100.62½
Union Provident Company	100.37½	
United Petroleum	100.12½	100.75
United Oil Company	.26⅜	.27½
Yellowstone Oil Compay		.11

Dividends for April

California oil companies paid out in dividends during April $587,568. In addition to this amount the Mexican Petroleum paid $80,000 on its preferred stock, making a total of all companies controlled in this state of $667,568. The list follows:

Amalgamated	$1.00	$ 100,000.00
Caribou	.025	8,070.30
Central	.015	15,400.00
Claremont	.015	7,500.00
Columbia	.01	9,992.26
Home	.01	7,500.00
Homesteak	.10	1,000.00
Monte Cristo	.025	12,500.00
Mount Diablo	.01	5,000.00
New Pennsylvania	.005	2,500.00
Olinda Land	.005	10,000.00
Paraffin	.01	3,000.00
Record		10,000.00
Rice Ranch	.015	4,500.00
San Fran. and McKittrick	.10	5,000.00
Sauer Dough	.02	4,000.00
Section 25	.50	20,000,00
*State Consolidated	.005	5,000.00
Traders	.006	9,000.00
Union	.006	183,387.50
Union Provident		90,767.60
United Petroleum		48,450.60
Western Union	.01	10,000.00
W. K.	.03	15,000.00
Total California Co's.		$ 587,568.26
Mexican Petroleum, Ltd. Prd.		80,000.00
Total all companies		$ 667,568.26

*Unlisted

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CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 4 SAN FRANCISCO, CAL., MAY, 1912. No. 11

Action of Rotary and Standard Drilling Tools

Written Especially for the California Derrick

By PAUL W. PRUTZMAN,

Consulting Chemist and Petroleum Engineer, Consulting Scientific Editor of the California Derrick.

In those fortunate fields where no water is found above the level of the oil sands, the drilling of wells becomes a very simple matter. In some of the Eastern limestone districts no water is encountered except close to the surface, which may be shut off with a single string of pipe, and in some parts of Santa Maria and Coalinga it has been necessary to run drilling water into the hole, but in the main, California oil wells encounter more or less water from the surface down, and often enough to add greatly to the difficulties of drilling.

Many devices have been tried, in the endeavor to avoid some of the recognized disadvantages of the standard rig, when used in the soft, wet and cavy formations common in this State, but so far, commercial success has been attained by but one, the so-called rotary drilling method.

This system is too widely used and well known to need any extended description, though it may be described in a word as a drilling method in which a casing carrying in its foot a corrugated or notched shoe, is rotated slowly and constantly with the shoe resting or pressing on the bottom of the hole, while water is pumped in at the upper end of the casing and, being discharged at the bottom, rises outside the revolving pipe and is discharged at the surface. In this method, drilling is accomplished in part by the grinding or cutting action of the shoe, but principally, in soft formation at least, by the softening and erosive effect of the stream of water discharged at the bottom of the hole. That is, while hard materials require to be ground away, literally bored through, soft shales, clays and similar incoherent sediments are merely softened into mud and washed away.

The advantages and the disadvantages of this system, so far as the mere drilling of the hole are concerned, are sufficiently obvious. In hard rock, or where boulders or thick hard shells are encountered in soft sediments, the rotary fails completely, as its ability to penetrate hard rocks is very limited. But in soft materials, even where thin hard shells are encountered, the rotary system is cheaper, more rapid, and in many cases requires less pipe for the completion of the hole, than the standard method. And where very sticky or cavy strata are found, or where quicksands are met at any great depth, the difficulties in the way of handling the standard rig are so great that the use of the rotary, or at least of some hydraulic flush system, becomes almost indispensible.

On the other hand, while the direct advantages gained by the use of the rotary in soft formations are beyond dispute, a serious doubt has arisen whether, in some cases (and these usually impossible to forsee) the use of any hyraulic system is not attended by certain indirect evils which more than offset its economy. Or in other words, whether the saving in the first cost of the hole always justifies the risk of losing the hole entirely, and perhaps others near it, at a later date.

The writer is far from presuming to pass judgment on a question to which the technical skill and the experience of the oil fraternity have not yet agreed on an answer. But it may be permissible to point out and describe certain underground conditions commonly met in the California fields, and to illustrate the workings of the two systems in each case, both as regards making the hole in the most expeditious and economical manner, and as to its safe and satisfactory completion. It will be understood that in making such comparisons no particular means of handling either system is pointed at the term "standard" being used to cover all systems by which he formation is broken, ground up or "mudded" by the reciprocating action of a bit and the drillings removed by a baler inside the casing; and the term "rotary" to cover those systems in which water or mud is pumped into a revolving casing or drill pipe, and the drillings carried up the hole, outside the drill-pipe, by displacement.

The operation of drilling an oil well has two distinct aims, and though these both tend to one end, it is necessary to keep them clearly separated in mind, as otherwise one may be lost sight of—as has often, and sadly, been the case. The first is to make hole to the necessary depth, with the greatest possible speed, and with the least expenditure for labor, fuel and materials. The second is no less important; to finish the hole in such manner that whatever oil sands are encountered may, when the well is put to production give up their oil in maximum quantity and in a state of purity, and to continue to do so as long as any profitable quantities remain to be extracted. And to these may be added a third, though the importance of this is not always recognized; to so conduct the drilling as to be able to keep an accurate record or log of the formation passed, as a guide to future operations on the same or adjacent wells. We will therefore consider certain typical conditions from each of these standpoints.

It is evident that the ultimate success or failure (from the mechanical standpoint alone) of any well, drilled by any means, will depend on the suitability of the method used to a great variety of conditions, any or all of which may affect the drilling of any one hole. These conditions are:—The average hardness of the formation drilled through; the harness of the hardest streaks encountered; the proportion of hard to soft material in the total depth; the firmness of the formation, that is, its ability to stand unsupported for some distance; the presence or absence of swelling ground or of running sand; the amount of water and the depth at which it is found; the character and thickness of the partings between water sands and oil sands; and others of less importance. Some unfavorable conditions retard the drilling of a hole, others make it difficult to finish it in a proper manner, some conditions become difficult to handle only at considerable depth, some are of importance only when following or preceding certain other conditions. The number of combinations is endless, we need here consider only the most usual conditions which are productive of difficulties in drilling or finishing a well, first illustrating the actions of the two methods under favoring conditions.

Case 1. Straightaway drilling in soft formation, without hard shells, running or cavy formation, or excess water. Such

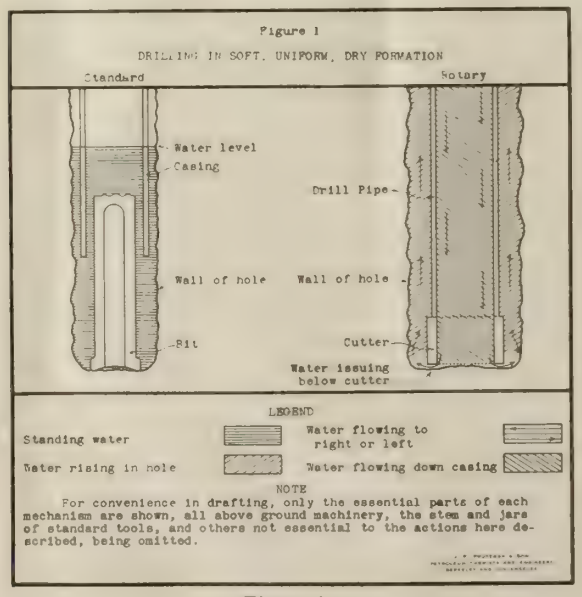
Figure 1
DRILLING IN SOFT, UNIFORM, DRY FORMATION
Standard
Rotary
Water level
Casing
Drill Pipe
Wall of hole
Wall of hole
Bit
Cutter
Water issuing below cutter
LEGEND
Standing water
Water rising in hole
Water flowing to right or left
Water flowing down casing
NOTE
For convenience in drafting, only the essential parts of each mechanism are shown, all above ground machinery, the stem and jars of standard tools, and others not essential to the actions here described, being omitted.

Figure 1.

conditions as these are ideal, and are but seldom found for the full depth of any hole, except in the very shallow territory. The action of each method under such circumstances, however, helps to explain its action under more difficult coditions.

In this case we are assuming that the hole is being drilled through clay and soft sand, lying in thick layers, without hard shells, and with no water present, or only enough for drilling with standard tools.

With the standard set, the operation of the bit is to churn up mud rather than to drill. The clay is softened by the water in the hole, and stirred by the drill into a thick mud, suitable for baling on the bottom of the hole, the ground is more or less pounded and cut by the bit, but on the sides it is merely washed down by the churning action of the bit on the water or mud in the hole. The hole wil be larger than the bit, because of this latter action, and reaming will not be needed in such ground. The depth to which hole is allowed to advance ahead of casing will depend on how well the walls stand up. Time is saved when the hole can be safely carried some distance ahead of pipe, but in any case, a large part of the total working time is taken up in running tools in and out, baling and handling pipe.

With the rotary method, drilling in such formation is accoplished almost entirely by the erosive action of the sheet of water squeezing between the lower end of the cutter and the ground on which it is revolving. The principal action of the corrugations or notches on the face of the cutter is to force to one side any cobbles or pebbles which may be met. As the principal force of the water is directed outward, it acts most effectively on the wall of the hole immediately opposite the bottom of the cutter, and thus the hole is necessarily larger than the casing, and probably, in most cases, considerably larger that the hole made with the standard tools of the same diameter.

As, with the rotary, drilling is necessarily continuous (the hole is usually lost if either revolution of pipe or pumping of circulating water be stopped for any length of time) all lost time due to running in and out, baling and lowering pipe, are saved. It is likely that the much greater rapidity of the rotary under these conditions is due to this saving, rather than to a greater efficiency of the cutter as compared with the drill itself.

No difficulty is experienced in such formations in finishing the hole, with either method, except that the rotary cannot be safely used to enter an oil sand, as will be noted below. The fact that a rotary hole cannot be properly logged is due to causes which will be mentioned later.

(To be Continued)

New Pennsylvania Petroleum Company

The New Pennsylvania Petroleum Company is drilling No. 7 in the old field at a depth of 800 feet with 10-inch casing. Drilling has gone ahead in rapid style and the indications are that the hole will be inexpensive and will be finished within the usual time for the old field wells, which is from six to eight months. Its location is propitious for obtaining a big light oil producer, which should double the present output of the property. The Cat Canyon well is as yet in the stage of cleaning out although on several occasions as part of live oil has evidenced that the well will finally clean itself with a gush and begin a consistent flow.

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California Production for and Field Operations During April, 1912

The total production of all the fields in California for the month of April aggregated 7,208,672 barrels which is a decrease of 80,826 barrels from the March production. The decrease however, is but apparent as the daily average in April was higher than in March by 5,144 barrels. The difference in the number of days accounts for the apparent discrepancy.

The total consumption (or shipments) for April shows a drop of 144,847 barrels, which drop is likewise but apparent, as the daily average consumption shows an actual gain of 2,217 barrels, the discrepancy being accounted for in the same manner as before, to-wit, difference in length of months. The total consumption for the thirty days of April was 6,406,918 barrels. The daily average production in March was 6,551,765 barrels. The daily average production in March was 211,347 barrels; in April, 213,564 barrels; gain, as chronicled, 2,217 barrels per day for thirty days, 66,510 barrels of oil.

A glance at the last issue of the "Derrick's" report will show that while there is an apparent slight falling off in almost every field, the same can be accounted for in the difference in days, because there was in reality a slight gain, which was more or less general, although Lost Hills increased remarkably, jumping from 85,042 barrels to 112,570 barrels, a production greater by some thousands than that of the Whittier-Coyotte fields, and one that justifies the expectations roused at the time of the first well brought in in Lost Hills.

Concerning the field operations more rigs were completed during April than was the case in March, the number for April being 63. There were less wells drilling, however as a much larger number were completed. Wells drilling in March numbered 447; in April 421: completed in April 75; in March 58. Eleven wells were abandoned in April as compared with 9 abandoned in March. There was a large increase in the number of wells on production, the figures jumping from 5,237 to 5,316 wells producing, thus showing 79 more wells making oil, the inference being that 62 wells, hitherto shut in, were put on production again.

Following is our regular report giving conditions in detail:

	County	Rigs Comp'	Wells Drilling	Wells Producing	Wells Completed	Wells Abandoned	Prod. for Month
Kern River	Kern	12	5	1600	11	1	1,081,650
McKittrick	Kern	6	11	207	3	1	484,662
Midway	Kern	15	134	602	12		1,978,551
Sunset	Kern	1	28	232	9		442,950
Coalinga	Fresno	7	72	837	10		1,610,498
Watsonville	Santa Clara		1	5			3,600
Arroyo Grande	San Luis Obispo		2				
Lompoc	Santa Barbara	2	5	24			77,850
Santa Maria	Santa Barbara		25	163	1		467,228
Summerland	Santa Barbara		1	122			5,675
Santa Paula	Ventura	10	30	277	8		53,465
Newhall	Los Angeles		3	78			10,828
Salt Lake	Los Angeles	2	11	280	1	1	225,045
Los Angeles	Los Angeles			406		7	34,170
Whittier-Coyote	Los Angeles	3	21	144			84,317
Puente	Los Angeles		1	56			2,430
Fullerton-Brea Canon	Orange	1	50	263	5		553,182
Lost Hills	Kern	4	17	20	5		112,570
Salines Valley	San Benito and Monterey		3				
Repetto	Los Angeles		1				
		63	421	5316	75	11	7,208,672

SUMMARY

Stocks, March 31 1912	42,585,868
Production, April, 1912	7,208,672
	49,794,540
Consumption, April, 1912	6,406,918
Stocks, April 30, 1912	43,387,622
Daily Average Production	240,289
Daily Average Consumption	213,564
Daily Average Surplus	26,725

Exports from San Francisco During April, 1912

Exports of California oil products from the port of San Francisco during the month of April show a tremendous increase, amounting to more than one hundred per cent both in quantity of shipments and in the value of the products exported. While the total shipments of all products in March was but 10,127,214 gallons, the total for April soared to 20,977,885 gallons; and while the March exports were valued at $239,939., the exports during April totalled $593,705. in value. More and more are California oils meeting with the demand from the consuming public which is looking for the best.

Evidently the crude trade had been too well supplied in March to require anything in April as shipments fell from more than 3,000,000 gallons to 1,300 gallons. The reverse was true of the naptha trade which took in excess of 22,000 gallons as against 2,145 gallons in March. Illuminating shipments jumped from three and a third million to almost ten millions gallons. The lubricating and paraffin demand was stationary, at 65,000 gallons, while the supplied residuum demand jumped from practically three million gallons in March to more than eleven million gallons in April.

Following we have arranged two tables, from figures given out by the Government, showing in detail the amounts of shipments and values thereof during the two months past:

	Exports During March		Exports during April	
	Quantity	Value	Quantity	Value
Crude	3,780,105	53,403	1,300	39
Napthas	2,145	335	22,065	4,300
Illuminating	3,345,815	131,556	9,867,531	417,012
Bubricating and Paraffin	65,785	43,171	11,021,621	158,655
Residuum	2,933,364			
Total Exports	10,127,214	239,939	20,977,885	593,705

J. M. NESBIT

PATENT LAW

United States and Foreign Patents Solicited

Park Building Pittsburg, Pennsylvania

The Diesel Oil Engine and its Industrial Importance

The Simplest and Most Efficient of Motors

By Dr. Rudolf Diesel, the Inventor

Since its first appearance about fourteen years ago the Diesel engine has been built by the thousand in the best factories of all industrial countries of the world. It has been proved to be a most reliable engine when properly built, the working of which is quite as safe as that of any other system of prime mover; and in general it is even more simple, since it does not require any auxiliary apparatus, and since the fuel in its natural and original form, without having previously undergone any transforming process, is direcly converted into work in the cylinder of the engine. As early as 1897, when, after four years of difficult experiments, the author had put the first engine into working order in the factory of the Augsburg Works, numerous engineering representatives and experts who came from various countries to examine this engine expressed the opinion that it gave better heat utilization than any other known kind of heat engine. From experience gained subsequently by working many engines, by gradual improvements in the construction and manufacture ,and by increasing the sizes, the results have been still further improved, and today the thermal or indicated efficiency reaches 48 per cent in this engine, and the effective or brake efficiency reaches, in some cases, 35 per cent of the heat value of the fuel.

The Diesel engine is an engine which converts the heat of the natural fuel into work in the cylinder itself, without any previous transforming process, and which utilizes it as far as the present standard of science permits; it is therefore the simplest and, at the same time, the most economical prime mover.

The two facts explain its success; it lies in the new principle of the internal working process and not in constructional improvements or alterations of older types of engines. There is no doubt that the careful working out of all the constructional details also plays a great part in the practical success of the Diesel engine, as in any other; but they are not the essential points, and above all they do not constitute the great importance of this engine to the world's industry.

A further reason for this importance is that the Diesel engine has broken the monopoly of coal, and has solved the problem of using liquid fuel for power production in its simplest and most general form. It has become for all natural liquid fuels what the steam-engine and gas-engine are for coal, but in a much simpler and more economical way. The truth of this statement was strikingly proved at the Turin Exhibition of last year. At this exhibition, in the large Machinery Hall, a steam-turbine and a large Diesel engine, both made by Franco Tosi, of Milan, and set up on the same stand, were worked together with the same liquid fuel. The boilers belonging to the plant were fitted with Korting nozzles for burning crude oil. The difference between the two plants was, therefore, this: for the working of the steam-engine the whole boiler plant with its chimney, fuel supply apparatus, purification plant for feed-water with feed-pumps, extensive steam-pipes, condensation plant with water-pumps and an enormous water consumption, had to be provided, with the final result of consuming 2 1-2 or more times the fuel per horse power required by the Diesel engine standing beside it. The latter being an entirely independent engine without any auxiliarly plant, took up its crude fuel automatically and consumed it directly in its cylinders without any residue or smoke. A better proof can hardly be imagined, even for the non-technical man, that except in special cases, the steam-engine cannot compete economically with the oil-engine, and from this point of view the power-plant in the Machinery Hall at Turin must be looked upon as marking a historical event. It is hardly possible for a country which produces no coal, like Italy, to develop a great industry based on the steam-engine, and this is one reason for the exhibition at Turin of about thirty Diesel engines of various types and sizes, and made in different countries.

Thus the Diesel engine has doubled the resources of mankind as regards power-production, and has made new and hitherto unutilized products of nature available for motor power. The Diesel engine has thereby exercised a far-reaching influence on the liquid fuel industry, which is at the present time improving more rapidly than was previously conceivable. This is not the place to discuss the matter in detail, but the author wishes to mention that, owing to the interest which petroleum producers have taken in this important question, new petroleum sources are continually being developed, and new oil districts discovered. Moreover, it has been proved by recent geological researches not only that there is probably on the globe as much, or perhaps even more, liquid fuel than coal, but also that it is more conveniently distributed as regards its geographical position. These facts, which are indisputable nowadays, have gradually silenced those who objected to too great a development of the Diesel engine for fear of insufficient stores of liquid fuel. Any such anxiety may be relieved by the fact that the world's production of crude oil increases at present 3 1-2 times more quickly than the production of coal, and that the ratio of increase itself is steadily getting higher. Further, that 40 per cent of th present production of mineral oil is already sufficient to supply the whole of the naval and mercantile fleets of the world with power, if they were worked by Diesel engines; also that with the world's present production the number of Diesel engines now working could be increased about a hundred-fold. It may thus safely be asserted that, with the continual development of new oil-districts, the production of mineral oil will increase much more quickly than the demand for newly built engines.

But with all this, the influence of the Diesel engine in the world's industry is not exhaunsted. As early as the year 1899 the author utilized in his engine the by-products of coal distillation and coke plants, such as tar and creosote oils, with the same satisfactory results as with natural liquid fuels, but at that time the quality of these oils was generally too inferior for their use in the Diesel engine, and they were, moreover, subject to continual variations. It is only in recent years that the chemical industries interested in the matter have, by improved methods of fractioning and refining, combined with more careful selection of the material, succeeded in supplying fuel of a constant and regular quality, without the drawbacks of the crude tar-oils used previously. These products—the tar and tar-oils—are thus to-day definitely brought into the sphere of activity of the Diesel Engine.

From what has been just stated, it will be seen that the Diesel engine is having an increasing influence on two other industries—the manufacture of gas and coke—the by-products of which have become so important for power production that an enormous business is at present connected with them.

It is especially noteworthy that every town gas-works with a modern installation, and every coke-works, can be completed with an electric power generating plant by using its tars. This will have an excellent effect on many municipal and national works. It would take too much time to enter into the details of this question, but one fact stands out clearly in this con-

nection, namely, that coal, which seemed to be most threatened by the liquid fuels, will, on the contrary, gain a new and wider ground of application through the Diesel engine. As tar and tar-oils are from three to five times better utilized in the Diesel engine than coal in the steam-engine, a much better and more economical utilipation of coal is obtained if, instead of being burned under boilers or grates in a wasteful way, it is first transformed into coke and tar by distillation. Coke is used for metallurgical and other general heating purposes; from a part of the tar the valuable by-products are first extracted, and undergo further processes in the chemical industry, while the tar-oils and combustible by-products, and a great part of the tar itself, are burned in the Diesel engine under extraordinarily favorable conditions.

The proper development of the utilization of fuel, which has already been started, and is now making rapid progress, is therefore the following: On the one hand, gas fuel in Diesel engines, and, on the other hand, gas fuel also in the form of gasified coke in the gas-engines; solid fuel as little as possible for steam-power generation, but only in the refined form of coke for all other heating and metallurgical purposes.

The list of fuels applicable to the Diesel engine is not, however, exhausted with these liquid fuels mentioned previously. It is known that brown coal or lignite, the production of which is about 10 per cent of the pit-coal production, also yields tars by distillation, and these tars when distilled, when worked up on paraffin, produce the so-called paraffin oils as by-products. Not all kinds of brown coal, however, are suitable for this process; but, in any case, these oils have been produced in such quantities that so far they have satisfied a good part of the German demand for liquid fuels for Diesel engines. To these must be added other products, such as shale and similar oils—produced not in great but in sufficient quantities to be of importance for power generation. Some countries—France and Scotland for instance—possess them in considerable quantities, and they are used in a good many Diesel engine plants.

It is not generally known that it is possible to burn fat vegetable oils and animal oils in the Diesel engine.

At the Paris Exhibition in 1900 there was shown by the Otto Company a small Diesel engine which, at the request of the French Government, ran on peanut oil and worked so smoothly that only very few people were aware of it. The engine was constructed for using mineral oil, and was then worked on vegetable oil without any alterations being made. The French government at the time thought of testing the applicability to power production of the peanut which grows in considerable quantities in their African colonies, and which can be easily cultivated there; because in this way the colonies could be supplied with power and industry from their own resources, without being compelled to buy and import coal or liquid fuels.

Similar successful experiments have also been made in St. Petersburg with castor-oil; and animal oils, such as train-oil, have been used with excellent results. The fact that fat oils from vegetable sources can be used may seem insignificant to-day, but such oils may perhaps become in course of time of the same importance as some natural mineral oils and the tar-products are now. Twelve years ago the latter were not more developed than the fat oils are today, and yet how important they have since become.

One cannat at present predict what part these oils will play in the colonies in the future. In any case, they make it certain that motor power can still be produced from the heat of the sun, which is always available for agricultural purposes, even when all our natural stores of solid and liquid fuels are absolutely exhausted.

Patents Recently Granted

The following recntly granted patents of interest to the oil trade, are reported expressly for the CALIFORNIA DERRICK by Joseph M. Nesbit, Patent Attorney, Park Building, Pittsburgh, Pa., from whom printed copies may be procured for 15 cents each:

Well boring tool, F. E. Tucker, Taft, Cal. 1,025,339.

Underreamer, A. P. McBride, Independence, Kans., 1,025,413.

Well-augur point, G. A. Estel, Jacob, Ill., 1,025,967.

Standing valve, A. J. Henderson, Saratoga, Tex.,1,025,977.

Tool for extracting well points, B. G. Horling, Coopersville, Mich., 1,026,509.

Well drilling machine, F. A. Heberling, Centralia, Ill., 1,026,508.

Well boring and casing machine for wells, Surn Jackson, Stockton, Cal., 1,026,589.

Derrick connection, Wm. Bishop, Saxonburg, Pa., 1,026,845.

Plunger, W. S. Locke, Los Angeles, Cal., 1,026,873.

Floating reamer support, C. C. Blood, Kalamazoo, Mich., 1,027,520.

Self-cleaning ball-valve pump, C. L. Parker, Los Angeles, Cal., 1,027,664.

Pulling stand for drill casings, A. C. Ludlum, New York, N. Y., assignor to New York Engineering Co., 1,027,867.

Expansive pump plunger, C. L. Parker, Los Angeles, Cal., 1,027,889.

Process for making well casing, Andrew Smith, San Mateo, Cal., assignor to Smith Metal Perforating Co., same place, 1,027,917.

Cable cutting device, H. C. Smith, Whittier, Cal., 1,027,918.

Pipe reamer, J. R. Desjardins, Fall River, Mass., 1,028,001.

Process of making well casing (2), Andrew Smith, San Mateo, Cal., assignor to Smith Metal Perforating Co., same place, 1,028,065 and 1,028,066.

Well drill, Frank France, Chicago, Ill., 1,022,472.

Wire cable fastener, B. K. Lamb, Bemis, W. Va., 1,022,954.

Well drilling machine, G. B. Kelley, Las Cruces, N. Mex., 1,023,207.

Anchor for well tubing, R. C. Baker, Coalinga, Cal., 1,023,292.

Derrick, W. F. Muth and E. W. Muth, Dayton, Ohio, 1,023,327.

Sucker-rod elevator, Wm. O'Neil, near Los Angeles, E. J. Schneider, Hollywood, and T. N. Kellett, Los Angeles, Cal., 1,024,017.

Fluid packing pump-piston, John Hahn, Los Angeles, Cal., 1,024,130.

Apparatus for boring wells, R. H. Canfield, Mooringsport, La., 1,024,310.

Pump jack for double acting pumps, F. W. Axtell, Fort

Well Supply Notes

South Chester Casing—A Correction

In our last issue we had occasion to mention the wonderful record made with South Chester wrought iron casing in the Union Oil Company's No. 3 well on the Bastanchury Ranch in the Coyote Hills near Fullerton. The record was made: it is a record too. The mistake lies not in this but in an inadvertant reference to the pipe as "steel". It is not steel pipe: it is iron pipe. Inasmuch as the South Chester Tube Company has never made steel casing for California we take pains to correct this mistake as emphatically as possible, in order that there may be no misapprehension on the part of anyone regarding exactly out of what material the South Chester Tube Company manufactures its California casing.

Largest Oil Tank in West

The Lacy Manufacturing Company have just completed for the Chanslor & Canfield Midway Oil Company the greatest steel tank ever built in the west. The proportions of this huge tank are as follows: diameter, 200 feet; depth, 16 feet; capacity 90,000 barrels of oil. The 55,000 barrel steel tank is about as large as is generally seen on this coast and the new oil container holds a great deal of interest for large companies and also for oil men in general. Midway is big every other way and this tank is but in keeping with the rest of the remarkable field.

CALIFORNIA DERRICK

The Oil Authority of the Pacific Coast

Published Monthly

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The * *Derrick's ** Creed**

The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's oil industry, to which it is dedicated, for the promotion of truth and in the aid of progress. For science, humanity and honor.

The Greatest Oil Company in California

The greatest oil company in California and one of the greatest individual oil companies in the world, is the Standard Oil Company of Calif.

Capitalized at $25,000,000., the company's assets are at present close to twice that amount, being shown by the books of the company at the beginning of the year to be $48,938,435. As the par value of the shares is $100., and the present market price of the stock on the New York Exchange is $165., anyone with a little money can purchase with the absolute knowledge that he is purchasing at $35. less value on each share than the company's actual tangible assets guarantee. The surest and most real opportunity to make money in the California oil business today.

The Company's statement of Dec. 31, 1911, shows that its net earnings for the year ending on that day totalled $3,141,626. The total amount of oil handled was in the neighborhood of 16,000,000 barrels. The profit per barrel, therefore is close to 20 cents. This profit, considering the vast investment and enterprise of the company, is by no means an unusual return, so that those whose business it is to find fault, really can have nothing to say. For while the percentage of gain on the capitalization will appear approximately 12 1-2 per cent, on the investment of the company, which is the proper basis on which to figure, the net gain would only be about 7 per cent. The company's assets are divided on the balance sheet as follows: Plant, $30,334,424; inventories, $14,585,285; accounts receivable $3,347,498; cash $480,479; sundry investments. $190,750. The liabilities are given as follows: Capital stock $25,000,000; surplus $14,213,195; notes and accounts payable, $9,725,240.

These figures show why this great company is a real oil investment. Where the Standard's money is laid out may be gained in not too good, but still better fashion than we have seen given out to date, by the following: Two refineries, one at Point Richmond, San Francisco Bay, one at El Segundo, on the ocean front near Los Angeles, the Richmond refinery being one of the greatest in the world, capable of handling 50,000 barrels of oil per day and with an estimated value of over $15,000,000.; three "trunk" pipe lines from Bakersfield, (connected with the west side fields) to the Richmond refinery; steel, concrete and earthen storage to the extent of about 25,000,000 barrels, all or most of which is said to be occupied; a large acreage amounting to at least 5,000 acres, of some of the finest sections of oil land in California; distributing stations in the larger trade centers of the Pacific Coast ;a fleet of tank steamers which we have no idea of the valuation of; a trade covering the Pacific litoral, taking in Alaska, Washington, Oregon, California, Nevada, Arizona, Hawaiian Islands, China, Korea, Japan and down the South American coast; a magnificent organization which is excellently paid.

For a number of reasons the Standard is planning to double its capitalization and the company has sent out a call for stockholders to vote upon this matter on July 30th of this year. The vast increase in the company's business, the gain in the tremendous holdings and the necessity for keeping up with the extraordinary demand of the present and the great increase which the company feels sure will be felt with the opening of the Panama Canal are the main reasons for this step. It is said that this future business as well as the vast present business has caused the company to plan to increase their Richmond refinery's facilities to the extent of $10,000,000.

It is a matter of surprise to us that the Standard's wonderful activity, business and resources have not received far greater attention. Certain it appears that the public, once they are aware of the real value behind this stock, will bid it up far beyond its present quotations and that the stock will pay immensely in course of time, when the business of the presnt has become dwarfed by the business of the future; and where instead of $50,000,000. assets the company will have $100,000,000. to back its shareholders. The greatest oil fields in the world are the California fields and the greatest future oil business will undoubtedly be the business of the Pacific.

Valuable Reading

In this issue we give some very valuable matter to our readers. The article on the Diesel engine by Sir Rudolf Diesel, its inventor, is of prime interest. This article was not written for the "Derrick" but the value of the matter is the same. The very interesting article by Sir Marcus Samuel, probably the foremost foreign authority on oil, will undoubtedly be an "eye-opener" to American readers who do not realize to what extent the use of internal combustion engines will affect the world trade in oil. The special article on the action of rotary and standard drilling tools, by Mr. Paul Prutzman, of the "Derrick" staff, should hold a very acute interest to oil operators, especially to field superintendents and drillers, and as there are several excellent illustrations no room is left for doubt as to exactly what occurs in the different stages of drilling. This article will be continued in the June number. Hon. A. S. Cooper contributes to the Derrick again, beginning in the next issue, and we have several very interesting papers from other well known writers, including two from the Government Bureaus, that will be both interesting and valuable. What other publication gives its readers a symposium of the really important matters in oildom, comparable to that given in the "Derrick"? No rind, no stuffing; all meat.

Parasitical Brokers

There are parasites in every industry. The breed that is particularly a menace to the oil industry is that type of broker-promoter which exists upon the policy of building their own schemes by tearing down the enterprises of others.

The "Derrick" months ago called attention to the method adopted by the G. S. Johnson Company in its fixed policy of knocking all other stocks when there was a chance of inducing the shareholder to take his money therefrom and invest it in Johnson promotions.

Fair criticism is all right. But all criticism should be without malice or selfishness. Deliberate knocking designed to destroy the interest of the others for the profit of the knocker is contemptible and often seriously damaging.

Witness the fate of the California Consolidated Oil Company. From the time of its organization the Johnson Company knocked that enterprise. Today the California Consolidated is a failure and the late Admiral Evans, as its president, attributed this largely to the efforts of such firms.

We quote the following from a letter to the Editor from the late Admiral Evans published in the California Derrick of August, 1911:

"A wilderness of falsehood concerning the company has confused and misled many of its stockholders, some of whom have been defrauded of their stock by dishonest stockjobbers with worthless junk to sell or trade. It is to be regretted that timid, uninformed or hysterical persons invest in the stock of any corporation. Thieves are too often lying in wait to despoil them of their property. It is a great pity that some of our shareholders in commmon with others, have become the prey of the promoters of this nefarious traffic. Unfortunately the company's directors have no control over these meretricious transactions. Indeed, they seldom hear of them until the shareholder has handed his stock to the pirate. You will be serving many small investors by instructing them to shun his allurements, and that dishonest trickery which amounts to larceny."

At the same time we ran a letter from the Johnson Company to one of the California Consolidated's shareholders, which was especially designed to get that shareholder's money out of the Consolidated and into the Johnson Company. It was a miserably infamous piece of work.

Other companies might be mentioned. The latest is the

Seaboard Oil & Transit Company. That company set about to raise funds from the sale of its treasury stock. The first knock came from the Johnson Company. It, and other cut-rate brokers, destroyed the market for the treasury stock. The Seaboard then levied an assessment and now the Johnson Company is out with a criticism designed palpably to discourage the payment of the Seaboard assessment in the hopes of securing the money for the Johnson promotions.

A fight between brokers is not our fight. The only interest that the Derrick has is for a square deal for the oil industry and for the shareholders in the various corporations. The Johnson Company has our best wishes for success in the development of their individual enterprises but we believe it merits vigorous condemnation for the methods it has pursued. Under such circumstances comparison may be permissable. By any partial judgment it should be said that the Seaboard has perhaps half a dozen properties, any one of which is of greater value than the entire Johnson possessions have thus far proven. The Seaboard already has twenty wells producing and the Johnson aggregation has, we believe, two. We leave the reader to judge which most merits his confidence—the critic or the criticised.

The Johnson Company has made many promises in regard to its companies that have never been fulfilled. Probably these promises and pledges were made in good faith and are excusable on the basis of over-enthusiasm. We believe, however, that it would be a more fit policy for that company to make good on its unfulfilled prophesies before setting itself up as the dictator of the oil industry of the state.

Insufficiency of Present Prices

Kansas and Oklahoma Oil is now bringing 64 cents per barrel. Pennsylvania crude has just advanced 5 cents per barrel, bringing the price to $1.60, the highest in three years. "Deep test wells" are being sunk all over the Eastern fields, which continue to make an ever diminishing output. Their supply is dwindling rapidly. The search for oil in foreign lands, especially by British capital, is being pushed with a tremendous and unremitting zeal.

The greatest oil fields of the world are in California. The lowest prices received for oil at the present time, are obtained by producers of oil here. The oil business at present is "looking up"—at least, that is the general view. That the present price received for crude oil at the well is far and away too low, is self-evident. The fact that California has the oil should not be made an excuse for almost giving it away. We note with gratification that producers seem to realize this fact; they are not "breaking their necks" to put "Mr. Drill" to work. While much new work is going on and the fields are livelier than for some time, there appears to be a general appreciation of the fact that oil should bring more money before a general renewal of drilling activity is brought about. The producer seems to have learned the lesson that to place any more oil in sight than there is an immediate future market for, is committing price suicide.

Dividends Again

The renewal of the disbursement of dividends by a number of companies is heralded with real joy by thousands of shareholders the country over and it is with pleasure that we note the return of good times as evidenced by this best of signs. The Premier is again to pay, on a moderate scale; 4 per cent per annum, to begin with. It is even said that that Petroleum Goat, Associated, may soon declare dividends. What better sign of returning good times than this? Godspeed the day ! ! ! !

Comment on Interesting Events

While the burning of the Pacific Crude Oil Company's gusher was tremendously spectacular and exciting, it was no more so than Attorney General Wickersham's statement in Washington D. C., to the effect that testimony by witnesses for the government "has developed sensations and startling disclosures" and that said divulgences "presents a remarkable picture of criminal conspiracy among high officials of the Southern Pacific Company to acquire from the United States under an agricultural grant, oil lands valued at $15,000,000." This is the famous case of the U. S. Government vs. the Southern Pacific Railway Company, instituted in December, 1911, to regain the valuable Elk Hills oil lands which the government alleges the railroad received final title to by falsely testifying that the lands were non-mineral in character when they knew, as a matter of fact, that these lands were oil-bearing. The government bases its suit now very largely on the testimony of Chas. W. Eberlein, former employee of the company and this testimony is of a very grave nature, as shown by the Attorney General's statement, which details that Eberlein, who was acting land agent of the Southern Pacific Company at the time of the fire which destroyed San Francisco April 18, 1906, saved all the secret correspondence and documents relating to the conspiracy to defraud the government out of the lands in question. Eberlein produced letters establishing definitely that the Southern Pacific Company officials were fully informed concerning the mineral character of the land and that the officials who wrote the letters had determined to keep the fact that it was oil land a secret until after patent had been issued. It is alleged that patriotism is Ebelein's reason for disclosing what he knows. Other testimony adduced to prove the Southern Pacific knew the mineral character of the lands was given by W. C. Youle the well known oil man, who testified that he had advised the location for oil of the entire district under dispute as early as 1898, and that away back in 1877 a well was "bored", conclusively displaying that the land was believed oil bearing. Professor Branner of Stanford University, teacher of almost all the foremost geologists of California today, asserted that oil is a mineral; so no quibble can dispossess the Government of the lands, if that point were to be raised. So on down the line of testimony thus far adduced, its all in favor of the government. But are the railroad officials worried? They say not; and they claim that 150,000 acres of land given them by the government patents valued at approximately $300,000,000, is with the exception of only some 6,900 acres, out of the governments reach, as it was stipulated in the patents that the same are incontestable at this date. The case is to be continued in San Francisco on July 1, at which time still more interesting disclosures will doubtless be made as witness Eberlein will again take the stand. What vast results may hinge on this case can scarcely be conjectured. In the meantime the oil is coming right out of the lands at present being developed by the Southern Pacific's subsidiaries.

Another interesting feature of the month was the absolute vindication in the courts of Los Angeles of the Guaranty Oil Co., and a proof that that corporation had been set upon by traitorous and designing persons formerly in the company's employ, who in collusion with British "financiers" did their utmost to wreck the Guaranty, steal its franchises, rights of way, survey and plans, and put it completely out of business, the end in view being to put R. L. Cox out of the deal and use his plans, his brains and his work to their own advantage. The scheme was the more rotten inasmuch as the ringleader was sent by Cox to Great Britain, and there, while in Cox's employ, he planned to ruin his associate and benefactor. This needs no comment except the "happy ending", which looks assured. Manager Cox deserves the biggest kind of a success after the trials he has gone through and the fight he has had to put up.

An interesting announcement is that the Standard will soon be running oil through a third pipeline from Midway to Bakersfield and thence, of course, to Richmond.

The Standard never rests but keeps constantly branching out.

Miocene Oil Company

The Miocene Oil Company, a close corporation of which A. J. Pollack the well known geologist of San Francisco, is the maanger is producing steadily having done better than 400 barrels per day since it was brought in in February, the oil being pure and free from water, sediment or other impurities. The Miocene's derrick is one of the few in Midway under which a well has been brought in, that is not spattered with oil; this because the well was handled from the outstart with a choking system which we believe to be in use also on the Standard's Midway properties. This system curtails the flow at the outset and allows of no great blowouts, which almost always result in damage and waste of oil, so that from its first minute on production the oil is saved. No broken casing or casing end dangling around in a large excavation at the bottom of the well is possible under this system and it can be seen therefore, that it is a very economical and conservative one. The Miocene's well has had no trouble of any kind and has flowed steadily, day in and day out. The oil is 20 degrees gravity and is sold to th Union Oil Company. The Miocene operates on section 3, 12-23.

Note: The Oil Well Supply Men's column will be run in full in the next issue and not curtailed.

Oil Fuel and Internal Combustion Engines

By Sir Marcus Samuel, Baronet, Chairman of the "Shell Transport & Trading Company, Ltd." of Great Britain.

(Republished from Current Issue of "Fairplay")

The advent of the internal combustion engine, and its complete success as a motive power in ships foreshadows a revolution in the shipping industry probably unequalled in any period of its history.

For many years the "Shell" Transport and Trading Company, Limited, were missionaries for the employment of liquid fuel as a substitute for coal, but, in spite of its overwhelming advantages, progress, until very recent years when large supplies of petroleum were developed on the California coast, was slow, and, with the exception of our own fleet and that of the "Paketvaart," which have been navigated upon liquid fuel for a long time, no great company in the Eastern trade adopted it, plentiful as the supply is. It was never claimed for liquid fuel that as a ratio more than two or three, as compared with best Cardiff coal, could be taken, and no doubt this mitigated against its general use. How different the question becomes when it is realised that by means of the internal combustion enbine the consumption of oil is one to four can easily be understood. Again, in this important departure the "Shell" Company have done missionary work. They first decided that the internal combustion engine for ships had reached the practical stage, and entrusted the building of a ship, the Vulcanus, to the Nederlandsche fabriek van Werktuigen en Spoorweg Materieel, of Amsterdam, who, by exhaustive experiments, had elaborated an internal combustion engine, in which they felt so much confidence that it led them to give to the owners an unconditional guarantee of its effective working, and I cannot refrain from comparing the action of this Dutch company with that of British firms of shipbuilders and engineers, of whom none had the courage or the energy to undertake such work except at owners' risk. It is well known that the firm of Burmeister and Wain, of the East Asiatic Co., Ltd., of Copenhagen, whose able managing director, Etatsrat Andersen, immediately saw the advantages of the new departure, designed and successfully ran the motor ship Selandia, having a length of 370 feet, and a beam of 53 feet. So that the credit of pioneering the new and great movement rests with Continental engineers and builders, to the lasting shame of the whole British shipbuilding and envineeriny world.

It was in January, 1911, that the Vulcanus commenced work, and we have had, therefore, no less than fourteen months' experience and observation. The measurements of the Vulcanus are: 208 ft. over all; breadth, extreme, 37 ft. 9 in.; depth, moulded, 13 ft. 2 in. Her main engines develop 450 b. h. p., and she has besides an auxiliary engine for generating the electric dight, and for many other purposes, of 40 h. p. The builders guaranteed the consumption of oil of the vessel, running at full speed, to be 0.4 English lbs. per b. h. p. per hour. In actual working this has been found to be actually about 0.42 lbs. of oil per b. h. p., or 0.38 per i. h. p. an hour, inclusive of auxiliaries. This makes a total of about two tons per day.

The consumption of a triple expansion marine engine works out at about 1.8 lbs. per b. h. p., or 1.6 lbs. per i. h. p. per hour. From these figures it is clear that the consumption of a steamer burning coal is, taking weight for weight, at least four times as great as that of an internal combustion motor-propelled craft.

The Vulcanus has been engaged in extremely trying work, trading mostly in the North Sea; but, in order thoroughly to test her, she was sent on a voyage from Rotterdam to Constanza and back. Her behavior was unexceptionable, and she proved herself to be a good and reliable sea boat. She is a single-screw vessel.

So much has been written about the Selandia, and so many opportunities were given tor the engineering world to inspect her, that it is unnecessary for men to expatiate upon her merits other than to state that her consumption corroborates the experience derived from the Vulcanus. When it is remembered that these two vessels are, after all, only experimental, what may we not expect when the finest brains in the world are directed, as they now are, to improving upon them? Already a German firm claim to have evolved successfully a two-cycle double acting internal combustion engine for ships. But, be this as it may, I know that at the Germania works of Krupps, in Kiel, two vessels of 9,000 tons, having internal combustion engines, are in course of construction, and one of 14,000 tons, whilst the Creusot Works, in France, are building two-cycle engines for both private owners and the French navy. It is known that many British firms have taken rights from foreign builders, and it is at least to be hoped that some at this stage are perfecting models of their own.

I pass from the engineering question to that of the supply of fuel, and I must repeat that the entire proposition is altered, from the fact that **one ton of oil** will do the work of **four tons of the best coal,** and under these circumstances it is abundantly clear that the supernumerary advantages in the ship having internal combustion engines are so great in the saving of weight, of space, and of personnel, as to be sufficient to justify their being, even though there were no economy in the actual cost of fuel. This, however, is very far from being the case, and, except at regular ports of coal shipment, I have no hesitation in saying that oil fuel will be obtained below—and in many cases much below—the equivalent cost of coal. Take, for a single moment, one of the most important stations for fueling—the Suez Canal. The average price of coal there is not less than 22s. a ton. The equivalent price of oil would therefore be 88s. Does anyone doubt that with the enormously increased production of oil throughout the world, supplies at such a price will be forthcoming in any quantities that may be demanded, it being borne in mind that already a considerable business is done at the Suez Canal, but that today's price is only 45 s., whilst contracts have been taken at an even lower price than this for Alexandria and Trieste, where the boats on this run of the Austrian Lloyd navigate entirely upon liquid fuel? At all the Gulf ports, the Atlantic ports (including New York), the Pacific Coast (supplied from California), ample supplies for the largest conceivable demand likely to arise for many years are forthcoming, and I speak with greater authority, and even certainty of the supplies of the Far East, which are derived in enormous quantities for vast fields in Borneo under the direct control of the "Shell" Company and its associates, and available from Suez to Japan, and on the basis I have cited there is not a single port in this itinerary where, under the new conditions of use, oil ships will not annihilate the steamer driven on coal.

I am often asked what certainty there is of supplies being forthcoming if a great development in the use of oil takes place. I reply to this by an analogy. It was in the year 1902 that I imported petrol in bulk in the **Murex**—the first time that such an operation was ever undertaken—when I was told that I was 100 years before my time! The consumption of petrol then in the United Kingdom did not exceed 20,000 tons a year, nor, I should think, 200,000 tons a year in the entire world. The fact that petrol could be transported so easily, and in such quantities in bulk, led to an enormous development in the motor-car movement, and I was frequently asked the same question as to where supplies were to come from. I did not hesitate to assure users that they might proceed with certainty of supplies, and today the consumption of the world is not less than 2,300,000 tons per annum. Supplies are forthcoming, and I do not see anything to prevent the increased production to any reasonable extent that may be required. And how foolish were the fears of those who would have arrested what has proved to be one of the most beneficial movements in locomotion ever conceived is expressed by the figure that the omnibus and cab companies operating in London alone consume three times the quantity required for the entire traffic for the whole country in the year 1902.

My firm conviction is that there will be no lack of oil for internal combustion engines, but it would be quite futile to expect to obtain it at the same price per ton as coal, although, as I have already stated an enormous saving will be made, in my opinion, taking the average cost at the various ports, of oil as compared with coal.

The present moment is a most unfortunate one from the consumers point of view, owing to continual labor troubles. Ships under contract by the oil companies are months late in delivery, and the enormous expansion of the oil trade, quite un-

foreseen by the companies, has led to a scarcity of tonnage unexampled in the whole history of the trade, from this cause.

It is only fair to warn shipowners that whilst the "Shell" Company and its associates are willing to erect storage at all, any, and every port where an assured offtake can be guaranteed such a campaign needs a long time for preparation, as in very many ports land has to be acquired, permission from the authorities for the erection of tanks has to be obtained and the tanks have to be erected. But not only are none of these obstacles insuperable, they are easily overcome, and timely notice of the requirements of those willing to enter the new trade will ensure that facilities for supplying oil will be given, and that the necessary fleet for its transport will be constructed. So great, however, is the congestion in British shipyards at present, and so backward are the builders in having either works or plans for the construction of internal combustion engines of a reliable type, that I fear great delay must ensue in bringing this great advance in the propulsion of vessels into full bearing. Certain I am that it will be rank folly for those engaged in the trade where oil is plentiful to build steamers, and my company have irrevocably made up their minds that the whole of the future tonage will be on internal combustion propelled ships.

The outlook for steamship owners would be blacker than it is were it not for the fact that existing steamships can easily be adapted for internal combustion engines, there being no difficulty in making double bottoms to ships, or even coal bunkers oil-tight. This has been successfully and economically in many ships now burning liquid fuel, and not built expressly for it.

I have seen no reference in discussions on this development to the very important point of the great economy in working cost, on the saving in fresh water for the boilers, nor to the gain in dispensing with its weight.

My last word must be—remember that **one ton of oil is equal to four tons of coal**; that the larger the power the internal combustion engine gets the greater will be the economy in the use of oil. Let shipowners calculate for themselves on this basis, and it will be found that there is scarcely a port in the world, outside those immediately concerned in the shipment of coal from the mines, where, even at the present date, oil could not successfully compete with coal, ton for ton in efficiency, in cost, leaving the enormous extraneous advantages of the oil-driven boat as net profit to the owner. The law of suppy and demand will be the only one regulating the price of oil. In spite of malicious and untrue statements constantly circulated by the opponents of oil, I am thankful for the opportunity which you give me of publicly stating that no agreements of any kind exist between the Standard Oil Company and the "Shell" group, and that, on the contrary, competition of the most strenuous kind prevails between them; and, furthermore, that neither company possesses anything approaching a monopoly, for there are many powerful and great companies outside them both who are no doubt prepared, when the time comes, to compete in the world's markets for the supply of oil fuel.

The steam engine is evidently doomed. Oil is king!

Special Reports

By Guy H. Salisbury

Development of a New Field in the Coalinga District

With the advent of the Berkeley Coalinga Oil Company, on section 2, 21-14, which company commenced well No. 1 during June of 1910, there has been developed gradually a very interesting field on and around that section.

The early geologists reports touched very lightly and with litle favor upon the possibilities of this section of the field; today it is attracting cosiderable attention from the practical oil men.

The explanation given by some of the geologists, and some of the more practical oil men, as to why oil is now found i the shallower territory, is that since drilling has been done on the lower plain it has driven the oilup to the shallow territory, by the water that found its way into one sand strata! Another theory presented is, that the early work done was with inferior equipment and new tools, and a general lack of knowledge of the formation, while today the operator has more perfect equipment and new tools and a better understanding of the geological conditions gained by the development of the field that has led to the possibilities that today are yielding good results. Such men as R. P. McLaughlin, of San Francisco, a geologist, formerly with the Associated Oil Company and the late Prof. Owens, geologist of the Southern Pacific, saw possibilities in that territory; but only a few other geologists who visited the field held out any encouragement to prospective developers that it would be a profitable district for exploitation, as most of them had been engaged examining deeper territory, and in some instances were influenced by the early failures. Today there are several companies operating on that section of the field, bringing in very nice producing wells at a small cost. In this work "Mr. Drill" has passed favorably upon the productive character of the land. Yea, verily, Mr. Drill is a good man to go by!

Special Report on the Dominion Oil Company

The Dominion Oil Company, section 7, 23-17, Kings County, now has well No. 1 down 2,720 feet with 6 1-4-inch casing; the formation has been very hard for the last 100 feet or more making work extremely slow. The well was started in February 1910, a wild cat well in the general term, as such is applied to all new territory.

The formation was new to the manager and the men working on the well and some mechanical errors were made during the absence of the manager, in the earlier stages of drilling. The present conditions of the well are very encouraging, reports th manager, and the cap rock now being drilled appears to lie directly over the oil sand, as the same formations are shown near the seepage at the outcroppings that lie about a quarter of a mile west of the well, in Little Tar Canyon. While the territory may not be termed "proven territory", as that term is understood, yet a few wells were drilled some years ago about half a mile west; they were shallow, cutting the sand high up on the formation, on what some are pleased to call the "back sepage".

The Dominion's second well can be drilled at a much less cost than this first one as the formation is now understood.

In bulletin 398, U. S. Geological Survey, by Ralph Arnold and Robert Anderson, these seepages are discussed at length.

The Dominion was chartered in Canada, the main office being in Toronto; the stock appears to be held by Canadians, none being sold in this vicinity.

The trend of the oil sands, along the outcroppings that skirt the western low hills, towards the Canadian Coalinga well on section 8, 21-15, about twenty miles removed, and the samples of oil from the Dominion well at times when the well was being bailed down, have impressed many people with the idea that the same formation exists about the Dominion; this idea is mostly due, in all probability, to the presence of a fine quality of light oil.

The Canadian Coalinga, section 8, 21-15, made an initial showing of about 6,000 barrels for the first day; it came with a very strong gas pressure, estimated at 1,500 pounds to the square inch. The Canadian is shipping about 6,000 barrels per month by tank cars over the Southern Pacific. It is stated that capital is being made out of the Canadian's strike to sell stock in the Dominion. Be that as it may, the work done on the Dominion well has been done in good faith, under honest management by a man well versed in drilling oil wells. From present reports it appears that the bit is not far from the oil sand and the manager looks for a change in the for mation any moment.

Little Jack Oil Company

The Little Jack Oil Company, section 28, 25-18, Devils Den District, has completed their water well; finished up at 225 feet with 8 1-4 inch. The well is now being tested out to determine the quantity and quality of the water, as water in the Devils Den District is quite an important factor in the development of the property. A standard rig has been completed, is being being rigged up and will be spudded in with the 12 1-2 inch casing.

The News from This Field is Written By
GUY H. SALISBURY—California's Best Known Oil Correspondent

News From California Drillers in Burmah

Some newsy letters have been received here from the oil well drillers now in India formerly of Coalinga. "Ed." Lightner, who went over in the employ of the British Burmah Oil Company, in Upper Burmah, was reported to be down with small pox, his chances of recovery being good. "Joe" Goal, in the employ of the same company, has charge of production in the Yenangyaung field, Upper Burmah. Ray F. Holser arrived in Coalinga early in June, having completed his contract with the company. Homer E. Young has returned, is now in Bradford, Pa. A. W. Brown, of Los Angeles, was in Rangoon hospital where he was to be operated upon for appendicitis. S. P. Mays, A. P. Barns, Tom Dressler, J. R. Grove, Wm. Shaw, J. B. Kelsey, Wm. Irwin, Gene. Adams, B. G. (Babe) White, Phil Kaufman, Chas. McGee and Frank Woodbeck are all with the Burmah Oil Company, running tools and are making good for the company. Mr. White reports nearly all in good health, very few sick, all enjoying a Sunday hunt in the jungles. Mrs. Wodbeck is with her husband, enjoying the new life. Mrs. McGee is on her way to join her husband. The general address of the men is Yenangyaung, Upper Burmah, India, care of The Burmah Oil Company, Limited.

Outlook Brightning

The activity manifested about the field indicates a revival of something like the life felt here three years ago. Property owners have, on a majority of properties, gathered up the scattered worn out bull-wheels, the discarded pieces of wire rope, the damaged pieces of casing and other relics of former work, and all have found their way to the junk pile. The old sump holes have been cleaned out, in many cases steel tanks have taken the place of the "sump hole" for the caring of oil. Many idle wells have been cleaned out, or re-drilled, and are now on the production list.

The new derrick is in evidence all over the field, giving a business tone where only a few months ago every derrick looked as if it was taking a rest. This activity is noticeable along the West Side field, from section 7, 21-15, along over section 12, 21-14, and section 2, 21-14, and through the field towards the East Side, over the Standard, section 28, 19-15, the W K section 2, 20-15, the California Oilfields Limited, section 21, and other sections of the company, to the Midland in the north east side field, section 10, 19-15. Much of this is due to the fact that a better understanding of how to conrtol the water in this formation is bringing about a very encouraged condition among the operators. It has been stated by several "higher-ups" in the Agency that "we may face a shortage before December, 1912." In fact the rapid strides made in the consumption for the past six months, and the claim that the report of a "large surplus" has been over estimated, are among the many indications pointed out that assisted in the conclusion that it may be necessary to resume development work in the very near future, and this is responsible in a large measure for much of the work now in in the field, in the placing of idle wells back on the producing list.

Hydraulic Drilling Company

The Hydraulic Drilling Company, section 12, 21-14, well No. 1 cemented off the water at 655 feet, 10-inch casing; now going ahead with the 8 1-4-inch; the well is 672 feet deep. A great body of water was encountered which promised difficulty in conrtolling and four tons of cement was used on the job in the hole before the water was shut off in soft blue shale, which was at this point 100 feet thick. The casing was tested for water and the job was found to be a good one. Well No. 2 stands cemented, the bit was carried past the first prolific sand and a second water sand developed; this has been shut off and the well capped to await the time when the production can be handled to an advantage. Well No. 3, located on the northwest 40 acres of the section is 294 feet deep, using 8 1-4 inch casing; this well is in shallow territory and will be finished up at about 340 feet with 6 1-4 inch casing.

W. K. Oil Company

The W. K. Oil Company, section 2, 20-15, is planning some extensive development work upon the property, at least 10 new standard rigs have been ordered and are now being delivered. The locations of the new wells are scattered over the section. Five strings of tools will be run and the work will be pushed to completion from the outset. This is deep territory, over 3,000 feet deep on the average; the oil is light and of a good refining quality. The company has thoroughly demonstrated the value of the oil sands. This present extensive development work by a management which is thoroughly familiar with the oil situation is a forerunner of better times in this field, and indicates an early renewal of work all through the field.

Large Pumping Plant on Section 2, 21-14

A large pumping plant is to be installed upon the Berkeley-Coalinga property, section 2, 21-14, which will be capable of handling 50 wells. This plant will handle the production of the Berkeley Coalinga, the Spokane Coalinga and the Washington Oil Company, and is styled the "No. 1 Power O W S Co." The three properties are being managed by H. C. Hunter as one property, due to the convenience of handling and the greater economy. There are at present 12 wells completed and producing on these properties; the oil will be marketed as soon as the pumping plan is fully installed and operating. The companies will continue to drill up their holdings until at least 20 wells are producing. The oil is very rich in lubricating qualities, being used direct from the settling tanks on the engine, and breaks readily in refining.

Deep Blair Well Believed Near Oil Sand

The Blair Oil Company, section 14, 21-15, has well No. 2 down 4,410 feet. The water was shut off at 4,310 feet, or about 175 feet below the black sulphur water sand. The formation has changed from a hard shale to a sandy shale and continues to run quite uniformly with the wells on section 30, 20-15. The manager feels quite confident that the hole will soon drop into the pay sand. The depth of the well and the character of the formation all indicate a light oil district.

Dominion Oil Company

Dominion Oil Company, section 7, 23-17, Kings County. Well No. 1 is 2,705 feet deep, 6 1-4-inch casing. Formation, a very hard sand; gas and oil stains showing with the change in formation.

(Continued on Page 16)

Report on the Seaboard Oil and Transit Company

The Seaboard Oil & Transit Company, which was formed the latter part of 1911 to take over a number of smaller companies, and which completed its organization around the first of the present year, has levied an assessment of two cents per share on all its outstanding stock, the assessment being levied for the purpose of paying necessary expenses and developing their properties to a state where the company will be able to pay all its bills and make those returns for which all legitimate corporations are organized.

It will be recalled that the "Derrick" ran a special article on the formation of the Seaboard Oil & Transit Company in the January Number of the present year and that we have followed the progress of the company since that time as best we are able, giving such information as we have obtained for our readers in our usual brief fashion. We now purpose to go more at length into the affairs of this corporation for the reason that there have been sent to the California Derrick within the last six months more than five hundred letters regarding the oil companies of California and of these many requested "personal information" concerning the Seaboard Oil & Transit Co. It has been an impossibility for the management of the "Derrick" to write personal letters in reply to all these inquiries, especially when they can be answered so much more satisfactorily in the columns of this magazine. However, the "Derrick" is always glad to extend any possible reasonable aid to its readers.

The main idea of the writers of the letters and the most frequently asked questions were: "Will the company be a success, and if so, how long will it take before it succeeds? Will it levy an assessment, and if so, for what amount will the assessment be? If the assessment is levied, should we pay it?"

To the best of the ability the "Derrick" will now endeavor to answer these questions according to what knowledge of this company it holds in its possession.

The first knowledge of the Seaboard Oil & Transit Co. that the "Derrick" gained was the notice of its incorporation in a "special" press dispatch, which stated that the new company had been formed to take over a number of smaller companies and that Jas. R. Riggins, Wm. Moore, F. D. McClure, Allen G. Nichols and other well known oil men were named as the incorporators. This company was formed at a time when many small companies were going out of existence under the stress of the low price period of last year, and its formation was heralded as the salvation of some nine small companies which were virtually "on the rocks", as were many other oil corporations, because they could raise money neither from the sales of their stocks, from the sales of their oil, which was then considered a "plethora on the market", or as far as we know in any other way: and they were all therefore, encumbered and in a most unsatisfactory condition, with disaster staring them in the face. That a number of them did not forfeit their leases and go out of existence, a total loss to their stockholders in each case had they done so, was due to their joining the Seaboard Oil & Transit Co., the incorporators of which company believed they saw the opportunity to wrest success from defeat by combining into one large concern all the smaller ones, doing away with a very great amount of over-head expense and saving the properties of the various smaller concerns for those who had invested their money therein. The officers of the various companies to whom the proposition was put to join the "Seaboard" heralded the opportunity with joy, as they saw the chance to make good where such a thing would otherwise have been well nigh impossible. The result was that the nine corporations were merged into the Seaboard Oil & Transit Co. and the interests of their shareholders were placed out of jeopardy of being wiped out entirely. So much for the history of the Seaboard's formation: That the idea of the incorporators of the "Seaboard" was a good one is proven by the fact that there have been similar amalgamations of interest since then, but until this writing none on so large a scale.

The "Seaboard" today controls about six thousand acres of land proven and prospective, according to the books of the Company, half of the land being in Mexico, half in California. The company reports that they have twenty wells in good shape, capable of a steady production of from twenty to thirty thousand barrels of oil per month, all of which we are given to understand is being marketed at improved prices. There are twenty-three additional wells involved but only those where the title has been completely turned over to the "Seaboard" have been considered and not all wells on properties which were controlled by companies taken into the consolidation. The "Seaboard's" properties in Mexico are considered excellent holdings by first-class, experienced, thorough-going oil men. Their California holdings are not drilled up sufficiently to tell exactly what they have excepting that they are undoubtedly capable of a much greater production than they are making at present and that on certain of their properties their opportunities for getting especially good wells are just as great as those of almost any company. Whether they will or not is a matter that cannot be foretold, but with reasonable luck and sufficient money to develop and keep out of debt the company should score a big success, just as was stated in the "Derrick" in the January number. The "Seaboard" did not, of course, at the time of its incorporation or for that matter since then, as far as we are aware, make known its financial condition, as no company with any idea of success makes this intimate matter public excepting under unusual conditions such as announcing the receipt of a large amount of money which is to be used for certain definite purposes. Hence the company's course was wholly a matter of conjecture and it was assumed at that time that the new company would either issue bonds or assess, of which two courses the latter was judged the most feasible, since it has been adopted. The assessment cannot be considered a large one but it will bring in $130,000., according to the number of shares issued; that is, providing all the shareholders stay with the company, which is doing all it can to be a real success, which means to be a dividend payer. It is suggested that the first step towards becoming a dividend payer, is getting in sound financial condition.

If the company had not assessed it probably would not have been able to raise money on bonds as money is still "tight" (though loosening) and as California oil has received a "black eye" from the operations of Burr Bros. and their ilk. The new company, of course, assumed certain obligations of the various companies of which it is composed and these have to be attended to; but we have ascertained from the management of the "Seaboard" that instead of these obligations being past due debts they have arranged to make payments during the several coming years, so that the obligations do not all fall due at the same time and swamp the company, but give an opportunity for the company's development along conservative lines and up-to-date production methods, which with reasonable success could be liquidated with a minimum pressure upon the shareholders. Just exactly how much the debts of the "Seaboard" would aggregate we do not know, but the management of the company states that it is no greater than a low rating of the value of the properties justifies. It is, of course, impossible to estimate definitely the value of properties of this kind, because oil property values depend on stock market activity, to a certain extent, and on the price of oil also; but to a live, go-ahead company, sanely financed and sensibly managed, the value of the properties is unquestioned. What the cash valuation of all the "Seaboard's" property is, or what it would net, cannot be stated; if the same conditions prevailed in the market today as prevailed in June, 1910, they would undoubtedly bring a very large figure.

The prospective value of the properties is large. There is no object in exaggerating anything having to do with any company, as far as the "Derrick" can see, but, average success in Mexico, where on three sides of their property gushers have been obtained by others, the Seaboard should get a well that would justify their entire capitalization, taken in connection with what they already have. Conservative men have stated that they are absolutely sure to get oil in large quantities on this property, and if they get even a fair well, and not a gusher like those around them, the company will score a very large success. This is putting it conservatively. But it takes money to drill oil wells, and it takes money to get oil properties in a good, revenue-producing condition, furthermore it takes time, and the old expression "Rome was not built in a day" holds good in regard to the development of oil property. Nothing but money will suffice to carry on operations or to liquidate obligations. Hence the assessment.

Aside from the experience and honesty of the management, given good properties we should say that the question "Will the company be a success?" lies with the shareholders. No matter what the officials may strive to make the company, without the aid of their stockholders they are powerless. If the shareholders cannot see that the welfare of their corporation is dependent on them, they stand to lose their investment; no set of corporation officials can shoulder the entire responsibility for the success of a company which has insufficient finances, and it remains for the shareholders to back

them. At least that is a dispassionate view of the matter. The stockholder of a company of the nature of the "Seaboard" should consider his position not solely from the amount that he has invested in the stock, but rather from the standpoint of the improvement of the condition of his securities from the time that the "Seaboard" company, or whatever corporation it might be, took charge of the affairs. That is to say, he should consider not so much the cost of his stock, but the market value of his security when the "Seaboard" made him the proposition for exchange. As that value, from our recollection, was practically nil, as far as demand was concerned, the new corporation is entitled to all the credit of every improvement in the shareholders condition made from the time that the consolidation was affected. It must be considered that the "Seaboard" had nothing to do with the depreciation of its properties prior to its control, and that their present condition, which is an improved one, is entirely due to the "Seaboard."

Now to the stockholders who have written us in this matter, it appears that you have benefitted by the new regime to an unexpected degree, in that you have not lost out entirely although you have an assessment to pay. It appears that the new management has an opportunity to make good to you your entire investment and, at a later date, dividends, if they can be supported through the reconstruction period; they have the property, and have been in the oil business a long time, so they understand it and can naturally be expected to carry so well organized a corporation through to success. If any single property which belonged to any of the absorbed companies does not pay for itself they can dispose of it as best they see fit and devote their efforts to such portions as offer the greatest return. That their expenses are not large in proportion to the business of the company would appear evident because thy were able to get along for six months without appealing to the shareholders for aid, and this during the hardest period. The price of oil, it is considered by those in touch with the situation, is due to rise and that will increase the company's income from the sale of its production. The oil business is a business of ups and downs and the worst was passed when the price jumped from 30 to 35 cents per barrel, when the Union bought the Agency's surplus. The present outlook for the business at large is very much brighter and should be encouraging to all honestly managed corporations.

Inasmuch as the gentlemen piloting the "Seaboard" have good names, long experience and every opportunity to succeed with the corporation, it would appear that if posible the assessment should be paid, but that is a personal matter and everyone knows best what he or she can do. The "Derrick" cannot shoulder someone else's responsibility. It can merely lay before readers who ask questions such facts as it may be in possession of. A certain amount of trust must be placed in the hands of other people in this world and the "Derrick" assumes that men who have until the present borne clean reputations will not change because they are trying to build up a corporation. Furthermore, there is a general assumption that proven properties can be made to produce with good management, and the "Derrick" takes this matter for granted. But as far as saying to anyone, "Do this—do that", the "Derrick" begs to be excused. Readers who are interested in Seaboard Oil & Transit Co., or other company, are requested to go entirely by their best judgment in the matter of investments and paying assessments; they should know that anything worth while has to be paid for and a certain amount of money is necessary to develop a corporation, whether it be received from the initial sale of stock or through assessing. There was practically no initial sale of stock in the "Seaboard"; issuing bonds was deemed inexpedient in view of the money market; the result is the assessment, which assures money wherwith to continue operations.

(Continued from page 14)

S. W. Consolidated Oil Company Get Rich Appearing Sand

The Southwestern Consolidated Oil Company section 6,21-15, cemented off the water in well No. 1 at 2,285 feet, 8 1-4-inch casing. The bit was carried into a rich oil sand for about 25 feet. This well has been carried into what appears to be a lower oil sand than entered by any other well on the section; the hole is much higher up on the formation, is new 2,315 feet deep and indications suggest this may be a new oil sand.

K. T. & O. Gets Light Gravity Well

The Kern Trading and Oil Company, on section 3, 20-15, has brought in a well, in the northeast corner of the section, the initial production of which was 600 barrels per day. The well is on the apex of the Coalinga Anticline, and offsets the W. K. wells on section 2, and the Limited on section 35. The oil is light gravity, more suitable for internal combustion engines and for refining than for use in a fire box boiler for the parent company's locomotives.

United Development Company

The United Development Company, on section 2 on the southwest quarter of the section, as soon as the rig is completed the well will be spudded in. Well No. 1 on this section stands cemented, the work of completing the well will be delayed on account of non-delivery of pipe from the mills to the company. The three wells on section 19, 20-15, of this company are producing.

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SANTA MARIA

OBTAINED FOR THE CALIFORNIA DERRICK
BY W. D. MALTMAN

Palmer Union Oil Company

Upon the return from London and other European points of President Frank L. Brown of this company, the company's directors ratified President Brown's negotiations with "a strong London syndicate", providing for the investment by the British of $1,500,000 working capital which is to be used in exploiting the company's resources, drilling in twenty or more new wells, and to provide shipping facilities against future developments. The directors of the Palmer Union issued a very frank statement to the public, saying that having spent five years in developing their property and knowing its great value and believing in the highly profitable future of the oil industry, resulting from the completion of the Panama Canal, they declined to sell their property; but that they were very glad to take in with them on a sound and conservative basis, experienced oil men and financiers who could be of aid in developing the Palmer Union properties. It was made evident in the statement that the new associates gained no undue advantage over the presnt shareholders, and that the transaction was an absolutely fair one to all interests, having been assented to by the company's largest shareholders.

It is thought a new announcement concerning further development will rapidly be forthcoming.

The confidence of British capital in the oilfields of California is fairly well shown by their eagerness to get in on any good proposition such as Palmer Union; one of the cleanest managed, best propertied concerns in the State today.

Santa Maria Oil Fields Syndicate

The Oil Fields Syndicate, operating on the John Bell tract, has brought in its first well with a production of 200 barrels a day. The oil is 20 degrees gravity, several degrees better than any previous strike in the Cat Canyon district. This well is located over two miles from the Union "Bell 5", the nearest producer, and opens up a large intervening territory. The company operating it was organized by W. P. Hammon of San Francisco, to take over several properties in the state, two of which were in this field. The success of the first venture on the John Bell tract will probably mean further immediate development.

Santa Maria Oil Fields, Limited

Santa Maria Oil Fields, Ltd., of London, is spudding in No. 7 on the Palmer Annex tract close to the Dome line. This well is in the near neighborhood of No. 6, which struck a highly saturated sand at 2900 feet, and is counted on to be a big producer. At the present time, the sole production of the company is obtained from its Los Alamos well which is flowing about 700 barrels daily of 14 deg. gravity oil. The well shows no signs of falling off and since the air compressor started it, nearly 6 weeks ago, it has kept up a constant flow at from 700 to 1000 barrels daily. It is the best producer in Cat Canyon. This well was an example of the slow process of getting them started in Cat Canyon, as it took two years from the time it was drilled in to get it to produce consistently and like the Palmer and Union wells, is now a phenomenal gusher.

Western Union Oil Company

Western Union Oil Company, in the main field, has a big well from its No. 49, which is now on the pump. This well is close to the Newlove line and struck a rich sand at the depth of 3120 feet. The production is around 29 degrees gravity and came in at 600 barreds daily. This location around which several new wells have been drilled during the past year with great success, including No. 49 the latest, has been considered too risky for a test; during this several years other development work has proceeded and the various successes wil result in drilling in several new wells to tap the rich sand of this area. The Western Union will start Nos. 50 and 51 at once.

Brooks Oil Company

The Brooks Oil Company is getting a splendid production from its No. 2 in Cat Canyon. This well is now doing approximately 500 barrels daily and the oil is showing a gradual lightening in gravity. The product is practically free from the sands which have so long been depreciating its value and in every instance this well has shown he ultimate outcome of the constant work necessary in the Cat Canyon district. It was finished up nearly three years ago, but for the first two years following its coming in, was in trouble with heaving sands most of the time. Lately it has become a consistent performer and is growing better. It is probable that the theory for this phenomenon, which has been a problem to all Cat Canyon operators, is that the immense amount of water needed to be forced into the hole to keep back the gas pressure, infilters into the oil sands and washes back the oil from the formation, leaving a highly gaseous non-oily sand within the immediate radius of the hole. When the pumps are applied to start the oil, this sand and gas, aided by the suction of the pumps shoots into the pipe with great rapidity and either fills up the hole for several hundred feet or plugs th perforations against any further flow. It is then necessary to bail out and renew the process many times before the first virgin oil sands enter the inner hole and as has been the case of the Los Alamos Petroleum and Brooks wells, the flow of oil is phenomenal. The water difficulties of Cat Canyon are chiefly due to this condition in the opinion of the writer and as has been snown in every case where constant endeavor has been put forth to get the hole cleaned down, time and time again a good well has resulted. Other experiences of this kind were had by the Palmer, Union Bell, and the Dome, all of which have brought in great producers after from one to two years of constant cleaning out. The greatest problem is to keep the hole in shape during this activity and the loss of the Henderson Pinal and Palmer No. 3 was caused by the pipe finally giving away to the tremendous pressure. This condition also necessitated re-drilling the New Pennsylvania Fugler below 200 feet.

Rice Ranch Oil Company

The Rice Ranch Oil Company in the old field is preparing to start two new wells, Nos. 10 and 11. The success with No. 8 and the prospect for a big well in No. 9 has been an incentive to thoroughly drill up the property.

Coblentz Oil Company

The Coblentz Oil Company is again drilling after a several months layoff. The hole is in good condition and a string of 4 1-2-inch pipe will be used from the present depth, 3750 feet.

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AGENTS

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Latest Quotations on the San Francisco Stock Exchange

Oil is deader than a door nail at present. Sales are few and far between and at prices in a majority of cases which are far from flattering to the stock. Only the high priced stocks command any attention, among these being the Union, which is quiet at around $100., Associated which is listless at usual $40 to $45 quotations, and the Mexican issues at increased values. Amalgamated is the live issue at present, making great strides towards par, the latest quotations on this stock having humped up rapidly on the strength of a rumor that was transformed into "positive information" that the company had brought in a new gusher, shortly before we went to press. This rumor has since been denied but it does not seem to have affected the stock in the least. Amalgamated, which is a subsidiary of Associated, is quoted almost one hundred per cent higher than its corporate parent.

Sales on the San Francisco Stock Exchange have been very limited. Claremont has exchanged in small lots at from 58 to 60 cents, New Pennsylvania Petroleum has sold at 50 cents and thereabouts, Palmer from 50 to 60 cents, Coalinga Central at 15 cents, and so on down the short line of those in the market. Stock quoted last year at $1.50 are now readily purchasable at one third the same amount of money, for instance Premier. This ratio of depreciation seems to hold good with a very large number of smaller stocks and the present uninterest goes to show how very true is the old saying that the "public likes to buy at the top and sell at the bottom." Following are the latest quotations on both San Francisco and Los Angeles exchanges:

Company	Bid	Asked
Amalgamated Oil	75 00	80 00
Associated Oil Stock	44 50	
Brookshire		60
Caribou	100 00	110 00
Claremont		58
Coalinga Central	20	30
De Luxe	75	
Empire	1 20	
Illinois Crude		16
Maricopa National	23	
Maricopa 36		16
McKittrick	09	
Midway Premier		38
Monte Cristo	1 30	1 37
National Pacific	02	03
New Pennsylvania Petroleum		49
Paraffin	50	
Palmer	58	60
Palmer Union	18	
Premier	50	
Producers'		
S. F. & McKittrick	12 25	
Sauer Dough	1 15	1 25
Silver Tip	90	
S. W. & B.	20	25
Sterling	1 47 1-2	
Turner	75	
United Oil	30	32
Wolverine	70	75
W. K. Oil Company	2 10	

Los Angeles Quotations

Company	Bid	Asked
Amalgamated Oil	74 50	75 12½
American Crude Oil Company	12	
American Petroleum Company (pfd.)	62 50	75 00
American Petroleum Company (com.)	50 00	
Associated Oil	45 00	45 37½
Bear Creek Oil & M. Company		40
Brookshire Oil		65
California Midway Oil Company	06	08
Central	1 00	1 65
Continental Oil		35
Enos Oil Company		10
Euclid Oil Company		35
Fullerton Oil		5 00
Globe	04	06
Jade Oil Company	07	07
Maricopa Queen Oil Company		30
Mascot Oil Company		65
Mexican Petroleum Ltd. (pfd.)	94 00	
Mexican Petroleum, Ltd. (com.)	68 75	69 50
National Pacific Oil Company	02⅛	02¼
New Pennsylvania Petroleum Company	47½	50
Olinda Land Company (Oil)		40½
Pennsylvania Midway Oil Company	7½	
Perseus Oil Company		7¾
Rice Ranch Oil Company	1 24	1 30
Trader's Oil Company	78 62½	81 50
Union	98 62½	98 75
Union Provident Company	98 75	
United Petroleum	99 25	
United Oil Company	31¾	
Western Union	85 00	100 00
Yellowstone Oil Company		08½

News From Mexican Premier

Col. Timothy Spellacy, who has recently returned from a trip to the east, tells us that the Mexican Premier Oil Company's well on the Soledad property is now down 1200 feet and looking fine. "Col. Tim." says that there have been several blowouts and that several sepages have been encountered at various depths. The Colonel expects to finish a good well at a depth of less than 2,000 feet. Col. Spellacy dos not seem to be much wrought up over Mexican conditions and merely smiled whn he was asked as to the dangers of the Petroleum situation in Mexico.

New Company

A new company has secured a large tract of land in the Corral de Wuati Rancho near Los Olivos and a geological report has been ordered for the selection of the site for well No. 1. This extends the territory south of the Princess and Dome properties and puts a boundary of the region known as Cat Canyon over twenty miles from north to south. A large portion of this has been developed and proven but there is unlimited room for additional work.

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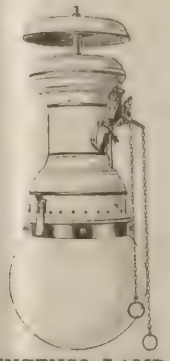
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CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. 4 SAN FRANCISCO, CAL., JUNE, REVIEW 1912. No. 12

Issued July 7th

Action of Rotary and Standard Drilling Tools

Written Especially for the California Derrick

By PAUL W. PRUTZMAN,

Consulting Chemist and Petroleum Engineer,

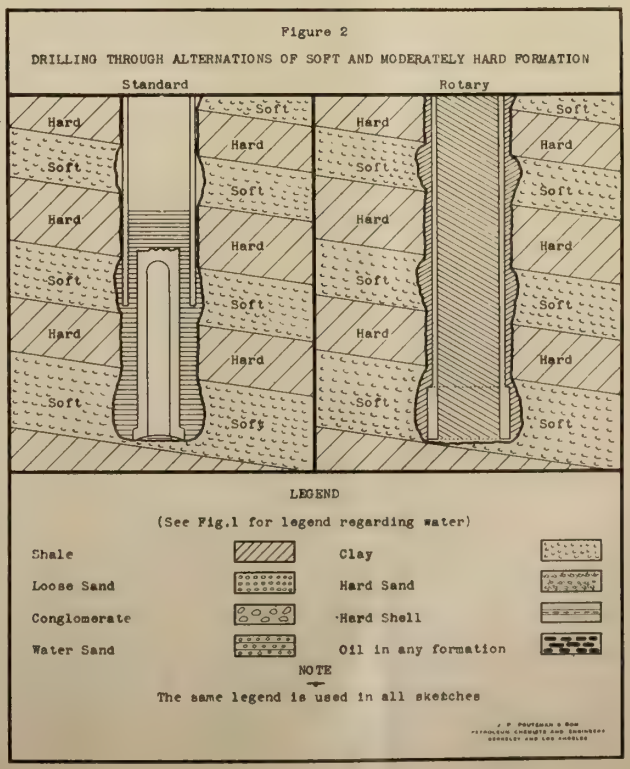
Case 2. Drilling through alternating streaks of soft clay, and of moderately hard sand or shale, without excess of water

As in the first case, the standard tools will make hole in the soft streaks by a combination of cutting and churning actions, simply mixing the clay to mud of a consistency suitable for baling. In the hard streaks, however, the bit is forced to cut a hole inthe same manner as a rock drill, by chipping, and in these layers the hole will be little if any larger than the bit, requiring the use of reaming tools to permit the entrance of the casing. Such a hole will be of various diameters in different layers, the hole through the hard streaks being of the size of the rimmer, or but little larger than the pipe used, while in the softer layers the hole will be enlarged by washing, to an extent depending on the tendency of the formation to slack, on the thickness of the soft streaks, and on the length of time the hole is left open at such points. It will be apparent that the thicker layers will be more subject to washing back than the thinner ones, having less support, and that as soon as the pipe is lowered past any layer (in the standard system), the cutting back of this layer will practically stop, except where the formation slacks under the action of standing water.

The rotary can be used, in such case, only when the harder streaks are still soft enough to be penetrated by the cutter, but where it can be used it is very effective, as the hole is of full size in the first instance, and no reaming is required. As the soft streaks are not cased off as drilling progresses ,at least not until an entire string is placed, a large part of the hole is constantly exposed to the softening action of a stream of water or mud, and under some circumstanes the diameter of the hole through the soft streaks will be very much greater than that of the cutter. The extent to which this enlarging effect will be manifested will depend on several conditions, viz:—on the tendency, if any, of the soft formations to swell and slough off under the action of water; on the relative porosity of the soft streaks; and on the amount (or rather, on the pressure) of the water present in the formation, i. e., whether the hyro-

Figure 2

DRILLING THROUGH ALTERNATIONS OF SOFT AND MODERATELY HARD FORMATION



static pressure on the wall of the hole is from the outside or the inside.

These three cases will be differentiated below. On the whole, it may be said that the conditions outlined in the first paragraph are favorable to the use of the rotary (on the score of speed and economy) provided that the proportion of relatively hard material o be passed is not too large. While the rotary is extremely efficient in soft material, it is, as a rule, much slower than the standard tools in even moderately firm material, and where such materials make up a considerable part of the formations to be penetrated, the average time made by the rotary may be lower than the average for the standard tools.

Case 3. Drilling through sloughing or caving formation. The presence in the formation penetrated of layers of material which cave, swell or slough off, causes a material difference between the operations of the two systems. Caving may be due to a variety of causes. First, the material through which the hole passes may be too unstable to stand unsupported. It may be practically fluid, as in the case of quicksand, or there may be a structural weakness which develops after the hole is drilled. A striking instance of the latter condition may be seen along the line of the Western Pacific between Midway and foot of the hill—here a grayish shale, which is firm and solid when supported, cracks into innumerable small cubes on the walls of cuts, and slides badly. This condition is less likely to obtain in a drilled well, where the hole offers but a small unsupported surface, and where the jarring to which railroad cuts are subjected is not felt.

Caving, again, may be due to an actual swelling of ground originally dry, when wetted . It is well known that most porous materials, such as clays, occupy less space when dry than when saturated, the difference actually being often several per cent of the bulk. In those rare cases where actually dry clay strata are entered, it is certain that the walls of the hole would be forced inward as the water penetrated back from the hole. This swelling would be quite irresistable by any sort of pipe, but the rarety of such cases is probably measurable by the unlikelihood of finding a dry layer of any sort at any great depth, water in some proportion being almost invariably present in any formation, even in the driest territory, when once the surface sediments are passed. Such cases, however, probably do occur.

Caving, so called, is in most cases a mere sloughing off of the material on the side of the hole, due to a softening or solution of the cementing material in partly consolidated sediments. Many clays which are stiff and firm even when wet, will scale off and fall to powder when a continually renewed surface is exposed to the action of water. That is to say, where the water is applied to the upper surface of such material, it softens for only a short distance, as the layer of loosened material lies on the surface and prevents the further softening action of the water. But where water is brought into contact with a vertical surface, the loosened material falls away as fast as formed, and leaves a constantly fresh surface on what the water may act, and thus the action is continuous. This is the principal reason for the constant running down of mud and sand from up the hole, in drilling with standard tools and with the hole full of water.

But this sort of sloughing of the sides, while it greatly enlarges the diameter of the hole at some points, and perhaps becomes the cause of later difficulties, is of minor importance as compared with the sudden sliding of the wall, commonly called caving, which so often collapses the pipe, or throws the hole out of plumb. This failure of the wall of the hole is due to the same cause which brings down the roof of mine tunnels in mucky ground—the loosening and displacement of a keystone.

Every miner realizes the care which must be taken, in driving a tunnel through any soft formation, to fill the space between the roof timbers and the top of the cutting. In effect, the roof of every tunnel is an arch, in which every piece of rock or particle of sediment supports and is supported by the fragments or particles adjacent, the whole being so interlocked that the weight, instead of being carried on the roof timbers, is thrown almost entirely on the rocks back of the walls. So long as no part of the roof of the bore is allowed to move, only a slight support is necessary to maintain the roof, as only the pieces immediately in contact with the roof timbers need to be supported. But once a single piece is allowed to move, even a few inches, the support is withdrawn from others farther up, these move in turn and loosen others, and in a short time the weight of a great mass of loosened fragments is resting, not on the walls of the bore, but on the timbers, and the strongest posts and beams are snapped like straws. A slide like this once started is almost impossible to hold, and in many cases tunnels are closed off and carried around a slide, because of the impossibility of finding any means for supporting a roof which has been allowed to become loosened.

It is probably true that under all conditions encountered in drilling oil wells, except where actually fluid materials such as running sand, or substances which swell when wetted, are encountered, caving could be entirely prevented by even a very gentle support to the wall of the hole, provided this support could be applied as fast as the hole was made. That is, if tools and casing could be so used that the hole drilled would be the exact size of the pipe, and the pipe kept at all times on the bottom of the hole, caving would never have a chance to to start, and would thus be restrained by even a light pipe. But as this is palpably out of the question, the only support which can in practice be given the wall of the hole is that offered by the outward pressure of the column of water in the hole.

In this respect, the advantage gained by the use of the rotary or other flush system is not inherent, but follows incidentally from the fact that while standard tools **may** be used with the hole full of water, with a flushing system the hole must at all times be full to the surface, and thus the variations in water level which alter the extent, or even reverse the direction, of the pressure on the wall, are done away with.

(To be Continued)

THE GENERAL OIL OUTLOOK

From the "Petroleum Gazette"

It is true enough that the advances which have occurred during the present year in both the crude and refined markets ought to have occurred a year or more ago, and the same influences that have advanced prices within the past few months are likewise the ones that previously subjected them to their abnormal depression. History can repeat itself in the oil business as well as in other things, but notwithstanding this the outlook in the petroleum world at this time may be safely described as exceptionally promising. The chief justification for this view is the enormous and increasing demand for petroleum and its products.

Even many of those in the business hardly appreciate the magnitude of this demand and are unduly concerned over the possible effects of relatively new pools and fields. In all its forms and products petroleum is probably being consumed at this time throughout the world at the rate of nearly 1,000,000 barrels a day. The demand is increasing and its further increase is contingent on the development of supplies to meet the demand. Both the crude oils and natural gases are being drawn upon to the greatest extent ever known to yield up their gasolines and napthas for the fast multiplying uses to which these products are being applied. For lubricating stocks, especially from the higher grades of crude, the demands are so great, both from home and abroad, that all refiners are behind with their orders for them, and some of them are sold a year ahead.

Fuel oil consumption is increasing on the railroads, in industrial establishments and ships both of war and of peace. As to the immense possibilities for increase in the use of oil in internal combustion, so prominent an authority as Sir Marcus Samuel, head of the Shell Transport & Trading Company, says he is fully convinced that engines of the Diesel type are going to take the place of steam engines and that his own company, whose fleet numbers 70 ships, will never build another steamer.

Cal. Oilfields Ltd.

The report of the California Oilfields, Ltd., for the year 1911 shows a reduction in the output of this famous company, the same amounting to approximately half a million barrels and a consequent reduction in profit totalling roundly $249,000. This notwithstanding, 30 per cent dividends were paid for the year. The company paid off $100,000 debentures and carried forward a balance of 43,000 odd pounds, amounting roughly to $215,000 to the credit of the accounts for 1912. The amount of debentures has now been reduced to $1,100,000. The company's land holdings aggregate 7,200 acres in Coalinga. At the close of 1911 the company had 114 producing wells and 14 drilling. They lost no wells during the year; in fact have lost but 4 wells since they commenced operations in 1901.

All engines on the main line of the Nevada Northern railroad are to be changed to oil burners immediately: general convenience.

California Production for and Field Operations During May, 1912

It is in the daily averages that the real conditions of production and consumption are best displayed; and turning to our monthly figures for April and May we find that while the aggregate production for May is greater than that for April, the actual production day by day fell short by 3,735 barrels of the daily average production during April, while as to consumption there was an actual daily average gain of 2,665 barrels of oil. In other words while the shipments or consumption of oil actually increased during May to the extent of 2,665 barrels daily, the operators not only did not attempt to increase their output to any degree, but did effectually strive to curtail it, succeeding to the extent named—3,735 barrels per day. It is for this reason that the daily average surplus is lessened in May by 6,400 barrels from that of the preceding month's daily average, the total daily average surplus during May amounting to over 20,325 barrels. Besides the fact that the present price for fuel oil is not very attractive, or at least not as attracive is it might very well be, there is another reason for the smaller output during he month underdiscussion than has already been given. This is, the water evil. Sunset is suffering badly from infiltrated water, as is part of Midway, and other fields are contending with this trouble in lesser degree, but still, like the poor, have it always with them. While much new work has been started lately no inconsiderable portion of it has been in Coalinga, where the water seems to be under better control than in the fields just mentioned, and as drilling in Coalinga is a good long job, as a rule, it will be some time before the new production will be felt. At the present time therefore, it is safe to say that there is no immediate great change in sight; excluding gushers from consideration. This probably means that better prices will result in the not far distant future, if the operators can keep in mind the fact that too much oil above the surface means reduced returns.

The total production in May was 7,333,180 barrels. The total in April was 7,208,672 barrels. The difference in the number of days in the month has already been indirectly gone into in discussing the daily averages, explaining that May's production was actually by daily average less than that during April . The total consumption in May was 6,703,087 barrels as against 6,406,918 barrels in April making a gain for May over April of 296,169 barrels; this figure being accounted for in the face of the small actual daily increase of 2,665 barrels, by the extra day.

The production of the various fields in reality was not greater than during April, yet the figures register a gain in a majority of cases. Kern River gained 16,370; McKittrick, 42,854; Sunset, 18,671; Coalinga, 33,334; Watsonville, 120; Lompoc, 1800; Santa Maria 31,425; Summerland 75; Santa Paula, 5,387; Salt Lake 7,131; Los Angeles 1,170; Whittier-Coyotte 3,958; Puente 120 and Lost Hills 4,161 barrels of oil. Strange as it may seem, Midway fel down on production in May to the extent of 43,865 barrels; Newhall's output dropped 1,256 barrels and Fullerton's April output exceeded that of May by 14,947 barrels of oil. The small apparent gains in the other fields are in reality bare averages, or even losses of small magnitude.

May shows practically no change in the number of wells drilling; one less than in April. More new rigs were completed in May than in April; 14 more. There were 5,374 wells on production in May as against 5316 in April, making 58 more producers, although 66 new wells were completed in May, which would indicate either that the remainder were not yet on the producing list, from whatsoever cause, or that they were capped off until better marketing conditions exist. Sixteen wells were abandoned during May—most of which went to water. The explanation for smaller production with more wells on the producing list is threefold; the price is not sufficiently high to induce extra efforts to make the wells produce heavily; the water trouble; and the fact that Midway has in a measure blown off its big "head" of gas, so that, the first great pressure having been removed, the average production is smaller.

Following are the figures showing May's production in detail and the other usual features of interest:

	County	Rigs Comp'	Wells Drilling'	Wells Producing	Wells Completed	Wells Abandoned	Prod. for Month Bbls.
Kern River	Kern	11	5	1617	8		1,098,020
McKittrick	Kern	13	9	207	11		527,516
Midway	Kern	15	125	620	23	2	1,932,686
Sunset	Kern	2	31	244	4	..	461,621
Coalinga	Fresno	9	71	829	10	1	1,643,832
Watsonville	Santa Clara	....	1	5	..		3,720
Arroyo Grande	San Luis Obispo	....	1	.....	...	.	.....
Lompoc	Santa Barbara	....	6	24	....		79,650
Santa Maria	Santa Barbara	....	26	171	4	2	498,653
Summerland	Santa Barbara	1	1	122	..	4	5,750
Santa Paula	Ventura	7	32	284	3	4	58,852
Newhall	Los Angeles	....	3	67	.	..	9,572
Salt Lake	Los Angeles	3	14	285		2	232,176
Los Angeles	Los Angeles		..	406	.		35,340
Whittier-Coyote	Los Angeles	2	23	144	...		88,275
Puente	Los Angeles	....	1	56	..		2,550
Fullerton-Brea Canon	Orange	5	48	269	1	1	538,236
Lost Hills	Kern	9	20	24	2		116,731
Salinas Valley	San Benito and Monterey	....	2	.	.	.	.....
Repetto	Los Angeles	.	1	.			.
		77	420	5374	66	16	7,333,180

SUMMARY

	Bbls.
Stocks, April 30, 1912	43,387,622
Production, May, 1912	7,333,180
	50,720,802
Consumption, May, 1912	6,703,087
Stocks, May 31, 1912	44,017,715
Daily Average Production	236,554
Daily Average Consumption	216,229
Daily Average Surplus	20,325

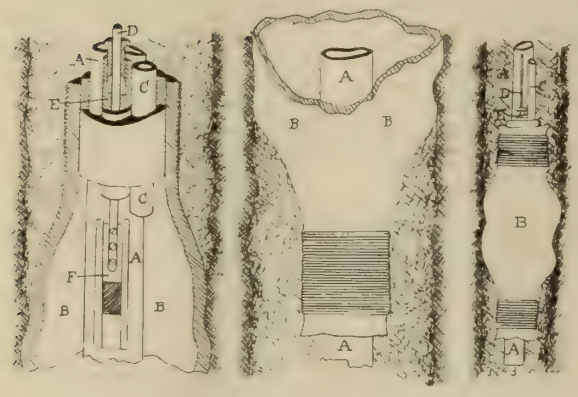
MAY EXPORTS FROM SAN FRANCISCO

Following is a comparative table giving the exports from San Francisco both in April and May, with values, and showing the fact that May was an "off" month, 4,238,266 gallons less of oil products having been shipped shipped with a consequent reduction in the value of products exported amounting to $113,802:

	Exports During April		Exports During May	
	Gallons	Dollars	Gallons	Dollars
Crude	1,300	39	110	5
Napthas	22,065	4,300	18,404	4,073
Illuminating	9,867,531	417,012	7,435,750	325,370
Lubricating and Paraffin	11,021,621	158,655	63,093	15,178
Residuum	...	.	.	.
Totals	20,977,885	593,705	16,739,629	479,903

Description of Hydraulic Packer

By A. S. Cooper, E. M., Former State Mineralogist of California



(Patented Aug. 15, 1911.

A A A is a string of pipes extending from the mouth of the well, down the well and through the packer B B B.

B B B is a packer. It is a hollow, dilatable and collapsible tube like structure, made of any suitable materials, such for example as a textile or woven fabric or elastic rubber or both. Its normal shape is hose-like, of greater or less diameter, and and may be of any length.

C C C is a pipe or line of pipes which extends from the surface or mouth of the well and enters into the packer. This pipe is used to expand the packer, which is done by pouring water into its upper end, and after the packer is located at the desired point in the well. The pressure in the packer can be regulated in several ways; for example, by making holes in the pipe C as high above the packer as may be desired; or the pressure may be increased by carrying the pipe C higher than the surface, or by direct pressure means. The amount of water poured into the pipe C will indicate the size of the cavity filled by the packer.

D D D is a rod which at the upper end is connected with a wire rope, which is within reach of the mouth of the well. The rod D enters the upper end of the packer, through a suitable packing gland E and connects with a sliding valve F. The valve F is normally closed by gravity, or if necessary by a spring, and thus closes the packer and permits it to be expanded. By pulling the rope connected with the rod D the valve is opened, permitting the water to escape from the packer, thus providing for the collapse of the packer and its movement into or removal from the well.

The device is placed in and is moved and removed as follows:

The packer with its connections are lowered in the well to the selected place by the string of pipes AAA. When the packer is at the required place water is poured into the string of pipes CCC until it causes the packer to expand and fit the casing or the walls of the well, thus practically separating the liquids and gasses above the packer from those below it. Upon opening the valve F by pulling on the rope which is connected with the rod D, the packer collapses by the escape of water therefrom and the packer can be moved in the well or it may be entirely removed.

Advantages of the hydraulic packer over other packers:

It can be quickly placed and removed.

Its expansion is many times greater than that of other pakers.

It will adjust itself to the inequalities of the walls of the well.

It can be made any length.

It can be used as a gas or air lift.

It is a well known fact that where surface water, that is water overlying porous or seamed strata, has a greater hydrostatic pressure than the hydrostatic pressure exerted in the formation on the oil or gas in a well, the oil or gas will be driven away from the bottom of the well.

The packer can be employed to search for a place in the well where the surface water can be permanently shut off be cementing or otherwise, or it can be kept in the well while it is being operated for gas or oil. The search is made by placing the packer in different parts of the well and pumping the liquids from below the packer.

The packer can be employed as a gas or air lift by opening the valve F and forcing compressed air or gas through the string of pipes CCC, into the string of pipes A A A.

There is what may be termed continual warfare between natural gas and liquids (oil and water) for the possession of a well. As there is relatively but a small amount of gas and an unlimited quantity of water, with comparatively a small amount of oil floating on its surface, and as the hydrostatic pressure of the oil and water is fairly constant, while the pressure and quantity of gas is constantly decreasing, the water and oil in the end will be victorious. They will stifle or drown out the gas and no more can be had, and the well, if the operated for oil, will be ultimately exhausted leaving the water in possession. Wells like the above have been relieved for a time by dropping a small pipe to the bottom of the well, and the pressure of the gas while not strong enough or in sufficient quantity to raise the column of oil or water in a two or three inch pipe will raise it through a 3-4 of an inch pipe by allowing the small pipe to remain open at intervals, governed by the amount of water or oil and gas present, and the pressure of the gas. The well will then continue to discharge until the amount and pressure of the gas decreases, until it is sufficient to operate even the 3-4 of an inch pipe.

After the packer and its connections are lowered to the desired place in the well, compressed air is forced into the upper part of the string of pipes AAA until the required pressure is obtained. The pressure required is ascertained by experience gotten from the well being operated. When the required pressure is obtained, the packer is expanded by pouring water into the string of pipes CCC. The upper end of the string of pipes AAA is quickly opened and the compressed air rushes out to waste. This relieves the pressure on the oil or water in the well and connected formation and gas is liberated which forms a spume with the water or oil. The column of spume in the well and connected formation is lighter than the hydrostatic pressure in the formation, in consequence of which the well flows.

When all the valueless compressed air has escaped from the string of pipes AAA and oil or water with gas in solution commences to flow, it is conducted to a separator and place of storage and use.

When the force and quantity of gas and liquids commence to diminish, compressed gas can be forced into the string of pipes CCC and the valve F opened. The compressed gas will enter the string of pipes AAA and act as a gas lift and assist the gas coming from the well to raise the liquids to the surface. The above cycle of operations being repeated as often as necessary.

The string of pipes AAA may be of different diameter to suit the amount and pressure of the fluids and gases present.

Sometimes a string of well casing ontains flaws, or is split, or a hole is worn through the casing by the rubbing of the drilling tools or line, causing the casing to leak. If the lower end of the string of pipes AAA is closed and an opening made in the string of pipes AAA above the packer and a pump placed above the hole in the string of pipes AAA and the water is pumped or bailed from the string of pipes AAA, thenn if the water in the casing, above the packer, is not exhausted by this pumping or bailing operation, the casing is defective. The point where the casing leaks can be located by moving the packer to different parts of the casing. Such openings when discovered can be closed with liquid sulphur and asphaltum.

Recent Research Work and Publications of the United States Geological Survey and Bureau of Mines

Dr. David T. Day's Paper On "The Production of Asphalt, Related Bitumens And Bituminous Rock In 1911

Dr. David T. Day's advance chapter from "Mineral Resources of the United States, Calendar Year 1911" on the above subject has reached us and needless to say, is a highly satisfactory performance. The introduction to this chapter states that the increased production of asphaltic materials in 1911 has resulted mainly from the movement throughout the United States for better roads. "There is a growing conviction" says Dr. Day, "that asphaltic surfaces and binders add materially to the efficiency of roads, in comparison with other surfaces and binders.

We will give here but a short resume of the main facts which Dr Day presents inasmuch as we cannot publish the whole paper because of lack of space, although we would like to do so.

The production of hard asphalt increased from 29,832 short tons to 35,846 short tons for the last year. The money increase was from $372,900 to $531,614.

The production of asphalt from petroleum jumped wonderfully. To quote Dr. Day direct:

"The production of asphalt obtained as a residum from petroleum in California, Texas, Illinois, and the midcontinent field, increased still more rapidly—from 159,424 short tons in 1910, to 234,951 tons in 1911, the value increasing from $2,207,937 to $2,684,230.

Bituminous rock fell off greatly in production. Ozokerite was not produced although efforts were made to get a production from Utah.

The production of asphalt in the United States in 1911 was 360,004 short tons, having a value of $3,820,751, as against 260,080 short tons, valued at $3,080,067, in 1910; a clear gain of practically 100,000 tons, valued at $740,684. Statistics are given showing the production of asphalt and bituminous rock from 1882 to the end of 1911; production of asphalt from 1908 to December 31, 1911, by varieties, in short tons; production of asphalt in 1910 and 1911, by varieties and by states, in short tons; production in the principal producing countries from 1902 to 1910, in short tons; the imports of asphalt, by calendar years, from 1907 to 1911, inclusive and the imports from June 30, 1902 to 1911, by countries, in short tons.

A decrease of $103,590 in the value of exports of asphalt from the United States to other countries was noted from 1910. A table is also given showing the exports from the island of Trinidad from 1907 to 1911, inclusive, to the United States, to Europe and to other countries.

Under "Sources of Supply" are given the names of the districts where asphalt is produced. Hard asphalt was produced only in Utah and Oklahoma. Efforts were made to develop the soft asphalt underlying Great Salt Lake near its northern end. Efforts were also made to develop the soft asphalt found near Lander, Wyoming. A full analysis of the crude liquid asphalt found near Lander is incorporated in the report at this point. Contrary to rumor or reports that had been circulated, no asphalt deposits were found in McKinley County, New Mexico.

In foreign localities, little changes were shown during 1911, Trinidad and Bermudez shipping relatively the same amount, but imports to the United States from Trinidad being considerably replaced by those from Bermudez, Venezuela. In Mexico the asphalt was mainly obtained as residum from the oil refineries of Tampico and Minititlan. Considerable attention is devoted by Dr. Day to the deposits in Cuba, which have not as yet proven very valuable. Japan is credited with producing 4,600 tons of Few's pitch in 1909, valued at $40 per ton. A synopsis of foreign occurrances of asphalt is given at this point. The synopsis shows the country, the kind of asphaltic material and a large margin is devoted to remarks, giving the most interesting kind of information in regard to the occurance, quantity and historical facts connected with each district where the deposits are located.

A classification of asphalt according to use is given. This classification extends for three pages and includes the methods of classifying used by Messrs. D. Holde and Clifford Richardson. In refering to the use of oil asphalts Dr. Day says that "Every increase in the quantity of California oil refined has meant an additional quantity of asphalt to be disposed of, until the supply of California oil asphalt has become so great that the need of a larger market is felt. The report is closed by a table showing the chief characteristics of the principal varieties of solid bitumens, and a list of the U. S. Geological Survey publications on asphalt.

"Liquefied Products From Natural Gas"

Technical paper 10, of the Bureau of Mines, called "Liquefied Products From Natural Gas—Their Properties and Uses," is a carefully written and excellent treatise on the subject to which it is devoted. Irving C. Allen and George A. Burrell are the joint authors. The introduction to the paper starts out by explaining that the chief purposes of the fuel investigations now being carried on by the Bureau of Mines is to increase efficiency in the production and use of the mineral fuels in the United States. One of the investigations, say the authors, has for its object the determination of the economic value of the petroleums and natural gases, with special reference to the supplies in the public lands, and the ascertaining of how these resources can be utilized in the industries with least waste and greatest efficiency. They go on to state that in new fields, where methods of handling oil and gas are necessarily crude, considerable quantities of oil and great quantities of gas are wasted. They cite instances of great gas wastage. The handling of gas, the paper continues, is a difficult matter, and consequently efforts at proper conservation have not, as yet, been entirely successful. No one realizes this more than the people of the West side fields in California, where control of the gas is often the one thing upon which hinges bringing in the well.

Natural gas, say the authors, may be divided into two great classes, "dry" gas and "wet" gas, the former the natural gas of commerce, the latter the gas on which the "natural gasoline" industry is now based. The authors dwell upon commercial fractions of natural gas, showing that there are four such, which they describe roughly as follows: (1) The gaseous product, the common natural gas of commerce; (2(the semi-liquid product, known as the new "wild" product, which should be used only as a liquified gas and should be held in high-pressure steel containers only; (3) the light liquid product, or light gasoline used for blending with heavy naphas, and, (4)the heavy liquid product, or ordinary high grade gasoline. The paper proceeds to a discussion of the development of gas liquefaction by pressure. From this they pass to "early attempts to liquify natural gas" and "later improvements" which in turn is followed by "practical deductions," which form virtually a brief history o fgas compression methods to date. A technical discussion of the properties of natural gas, present waste, proposed utilization of products, experiments in liquifying crude natural gas, yield of liquid products and other points too technical to be discussed with out loss of some of the subject matter, follows. Analyes of value are given with the discussions. Two pages are given over to a discussion of the efficiency of liquified product for definite uses and to the handling of natural-gas products other than liquified gas.

This paper is a very valuable and excellent one, and needless to say deserves careful attention from gas men especially such as have a "wet" gas. Here in California where the gasoline from gas industry is assuming ever increasing importance ,it cannot fail to be of deep interest. The fact that there is such a diversity of gases found here is of prime interest. "Wet" and "dry" gases are found on neighbor in leases in some fields, and even in different wells on the same property, in Midway. There is a certain area in Coalinga producing a highly saturated gas, we understand; while the old Santa Maria field produces a gas which bears a high gasoline content. The best gasoline well in the State at present is without any doubt the Birch well, formerly known as the Menges well in the Fullerton field. The big gasoline from gas production of this well is said to be making the owner of the plant, as well as the owners of the well itself, a good sized fortune.

Natural Gas Investigations of the Bureau of Mines

George A. Burrell, of the Bureau of Mines, presented a paper at the 7th annual convention of the Natural Gas Association of America, held in Kansas City, May 21, 22 and 23, on the natural gas investigations by the Bureau, which came as a result o fthe request by the last convention for assistance in solving problems which arise in the utilization and conservation of natural gas. We undertake to give a brief resume of that paper herewith.

Mr. Burrell's paper began by stating that no attempt toward a complete comparative study of the natural gases from different fields of the country had yet been made but that the characteristics of the gases from a few wells in different fields had been determined and that the Bureau is gathering samples from many wells in all the fields, is submitting them to examination and will issue a bulletin on the results of same in the latter part of the year.

The work already accomplished makes it appear that natural gas consists of paraffin hydrocarbons with nitrogen and carbon dioxide as impurities. The paper then gives some very technical information concerning gas constituents and passes on to say that in natural gas we have a fuel "rich in heat units, non-poisonous, diminishing in quantity and which can only be replaced as nature sees fit," and this product selling for less than the manufactured and inferior gas. The value of the different gases lies in their compositions. A well will usually produce the same kind of gas from the initial flow on. The composition of the gas supplied to Pittsburg, for instance, has not varied appreciably in 18 years, as determined by the tests then and now; but this gas comes from many different wells. Natural gas, says Mr. Burrell, contains no carbon monoxide, the deadly posion found in illuminating and water gas. A paragraph as to the genesis of natural gas and petroleum states that the knowledge of the composition of the gases is essential in order to answer the question "where can gas be found?" Touching on the production of gasoline from natural gas, the author states that a highly useful product is being obtained, for which there is an ever increasing demand and that the business of manufacture of this product is growing rapidly. Upon the constituents of the natural gases depends the amount of gasoline extracted; a chemical examination—will show what may be expected from a particualr gas with a given plant equipment. Sometimes as high as five or more gallons of gasoline per 1,000 feet of gas, may be extracted. Ways of determining the gasoline content are given by the author. The idea of bottling a gas condensate in an iron tank or receiver, and using it for lighting purposes was tried out by Mr. Burrell and I. C. Allen, also of the Bureau of Mines, with great success. This condensate was obtained by applying a pressure of 500 lbs. to the square inch and a temperature of 0 degrees C. to crude gas obtained from wells at Follansbee, W. Va., and about 50 cubic feet of gas per gallon of liquid was realized. The author goes on to say that the Bureau's investigations have been technical endeavors to aid in the conservation of natural resources and that it is possible, if a bottled gas sold at a reasonable price becomes available, the outlet for the material will be large; which suggests the most practical kind of conservation. There is already one company in business using the new product, which they term "gasol". The paper closes by stating that "the Bureau of Mines wants to do all it can to conserve the natural gas supplies" It is needless to say that the work of the Bureau corroborates the statement to the fullest degree.

U. S. Geological Survey Notes

The value of the pottery products of the United States in 1911 was $34,518,560.

The total value of the Gypsum and gypsum products of the United States in 1911 was $6,462,035.

The total value of chromite produced in this country in 1911 amounted to $1,629. The ore came from Shasta, Tehama and Siskiyou counties, California.

1911 production of anthracite coal was valued at $174,852,813. The production totalled 80,732,013 long tons.

The value of the quicksilver production in 1911 amounted to $977,989; 21,256 flasks of 75lbs. weight each having been produced, the major part of which, (18,860 flasks) ame from California.

CALIFORNIA DERRICK

The Oil Authority of the Pacific Coast

Published Monthly

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The * *Derrick's ** Creed**

The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's oil industry, to which it is dedicated, for the promotion of truth and in the aid of progress.

Statement by Management

The management of the California Derrick, finding that a misapprehension regarding the naming of each issue appears to be general, wishes to state that the **June Number** is a **review of events in June**, as far as we are able to summarize the same; and that the same applies to every issue. The "Derrick" does not go to press until the end of the month. Formerly the date of issuance was the 25th of each month. Finding that date not wholly satisfactory the date was changed as here announced. The "Derrick" also begs its readers to make some allowance for mailing and thanks those who have so kindly done so thus far.

Mine Disasters And Oil

How ofter the "Derrick" has called attention to the horrors of the Mine disaster! Concerning this most terrible form of death and resultant desolation to both women and children, we read in the recent speech of J. R. Haynes, M. D., Special Commissioner of Mining Accidents in the State of California, as follows:

"Of all American industries, coal mining is the most hazardous. From three to five thousand coal miners are annually killed outright, and the number of killed and seriously injured combined amounts to from eight to ten thousand each year in the United States. Since 1890 more than 30,000 coal miners have been killed and more than 80,000 have been seriously injured. In the single state of Pennsylvania in the year 1907 alone more than 1,000 miners were killed, leaving nearly 1,000 widows and 3,410 children under 10 years of age."

This is an official report, published by the United States Senate, as "Document No. 265 of the second session of the 62d Congress." We are told in the same pamphlet that the death rate in 1907 totaled 4.86 or practically 5 out of every 1000 miners in the United States were killed by accident in the single year.

Few indeed are the fatalities attendant upon the production of oil. While it is true that oil cannot yet supplant coal as a home heater and for the American housewife's kitchen range in winter, the extraordinary increase in the number of uses to which it has been found applicable as a fuel and power generator, the most notable of which uses is that made possible by the invention of the Diesel engine, will greatly decrease the demand for coal. Thus oil fuel is one of the most humane as well as economical of power generators.

The conclusion of the address from which we have quoted, would melt a heart of stone.

"At the best, the coal miner leads a hard life, shut out from the light of the sun, breathing all day foul air and gases, prone by his occupation to tuberculosis and other diseases, living with his family usually in dirty, smoke-covered villages, bare of trees and vegetation, all this for miserable wages, in order that you and I may enjoy our bright firesides and that the business of the nation, through factory and railroad may go on."

Can anyone read the above and believe for a minute that the extension of the use of oil is not humane? Every time a ship is converted from a coal burner to an oil burner, whether of fuel oil direct as in internal combustion engines, or as a steam raiser, the chances of some fellow-being for life are greatly prolonged.

California, The Petroleum State

California is pre-eminently the petroleum State of the Union. From the present outlook it will remain so indefinitely. Not only this, however, but California is the richest per capita State in the Union, and, considered as a country, the richest in the world. A few figures supplementing this statement may not be amis. We take the following from the Annual Report of the California Development Board:

Per Capita Wealth in 1910

	Wealth	Debt
California	$2,235.00	9.71
New York	1,868.00	57.64
Pennsylvania	1,707.00	19.55
Ohio	1,367.00	72.72

Per Capita in 1902 In Europe

	Wealth	Debt
U. S.	$1,318.00	14.52
U. Kingdom	1,455.00	74.83
France	1,228.00	150.61

Undoubtedly a large amount of the great per capita wealth and small indebtedness is due to the fact that California is so wealthy in oil and also to the relatively smaller population. Oil is the greatest individual industry of California and is exceeded in annual value by only the combined Dairy and Poultry industries (if such they can be termed), and that by but$5,-500,000 for the combination. The value of crude petroleum in 1911 is given by the statistician of the Development Board as $42,000,000.00, this being the average for all grades of crude oils produced. When it is taken into consideration that fuel oil brought only 30 cents per barrel a good part of the year (or as oil men undoubtedly feel, a bad part of the year) it will be seen that the valuation is low and that with a price of say 50 cents per barrel for fuel oil and the same rates as now paid for the higher grades, the total value of the production last year would have been in all probability $50,000,000; instead of $42,000,000. But even in the low period the Oil Business topped all others excepting the combination already discussed.

The Development Board's Report was excellent. While not a great deal of space was given to the oil industry, the matter was reliable and conservative. In this connection the "Derrick" begs to thank the Board for the due credit given us for the use of our figures. It was not to be expected that the Board would give the same space to oil as to the farming and agricultural interests, but the figures afforded were very satisfactory indeed.

Exaggerated Report

The rumor that was made into "positive inside information" that a heavy tax was to be laid on the production of oil in Mexico has fallen flat. At first this received general acceptance and its effect was immediate in oil circles; whenver Mexican oil was mentioned it was said that "it looks as though the industry had got a black eye down there." This caused a great many shareholders of Mexican stocks to worry greatly, without any doubt. But, when the facts came to be known, what was ascertained? That while there is to be a production tax put upon oil to be help pay the war expenses of the government, this tax, over which such a furore was created, will amount to but six cents per barrel Mexican, which is only three cents in American currency. Not only this, however; the cost will not even be borne, in a majority of cases, by the producers; according to our live Bakersfield contemporary, "This additional cost the consumer will undoubtedly have to pay, as that is provided for in nearly all, if not all the contracts that have been made—and there is a market for production in the American Atlantic Coast at prices quite sufficient to take care of any future business and pay the tax" ! !

So here we have a hullaballoo for nothing. We trust that the testimony which witness Eberlein is about to give regarding the S. P. land fraud cases may not back down to a comparable or proportionate extent to the above story's shrinking, to have prosecuted the railroad on such testimony, but it will for, if it does, not only will it be a "bunk" plain and simple, be an outrage on the public which pays the bills to prosecute; a rank agitating hoax from start to finish.

Oil Protective Association A Success

It is with very great pleasure that we quote hereunder from our excellent contemporary the **Midway Driller** an article published in their issue of June 22, showing that a very real appreciation of the work of the Oil Protective Association is had by the oil companies from Sunset on the south to North Midway, and the value of such work to all. The facts quoted from the "Driller" speak for themselves, especially those relative to the necessity for accurate data regarding drilling records, which is something the "Derrick" has been at pains to emphasize. The "Driller's" article begins by saying that probably the busiest place in all the West Side fields during the week

prior to the date of publication, was the office of the Kern County Oil Protective Association, proceeding to outline the reasons as follows:

Requests for inspection and assistance have come in which cover the entire field from Pentland junction to North Midway, the record being five calls in five hours. The interest evidenced by such prompt appeal has been very gratifying to all who have worked to put the association on its financial feet so that adequate assistance could be provided for Commissioner Forker; but with the present accumulation of book work the entire force will be hardly able to cover all the work promptly.

Deputy Fleisher has been assigned to the Maricopa district and has been actively canvassing the drilling wells nearing completion. In this older territory one of the difficulties is the fact that the drillers and superintendents who brought in the old wells have in many instances left the field, and the details of logs, casing records, original behavior of both oil and water sands, and circumstances attending landing of water string are almost impossible to obtain.

The systematic geological work will be taken as soon as the necessary data is obtained and classified.

A complete collection of all the logs in the field, together with the exact location of each rig and elevation above sea level of the derrick floor, is positively necessary before any cross-sections or triangulation computation for underground contours can be made. The association is now using every effort to complete this preliminary data at the earliest possible moment, and earnestly requests the operators to be prompt in sending in the logs when requested by the secretary. In making up a log for the association it should be remembered that the casing record, perforation, date of commencing and finishing drilling, full details of behavior of water sands, and all details of interest should be included.

The geological work must of necessity concern itself with certain areas or districts, such as the district about the old Lakeview gusher, the district in the vincinity of the Buick wells, etc. With the information now available it will be possible to work out the underground water and oil contours or zones with considerable exactitude and every well subsequently brought in will make the underground situation more certain.

It will, therefore not be long before the geologist will be able to give any operator a very close estimate of the situation of oil lands and probable shut off. To be able to plan a casing in advance, with real assurance of underground conditions and not relying to considerable extent on a "hunch," will be very satisfying to the small operator who has had to rely in the past on inquiries from neighbors and some rough home-work calculations. The success of the large companies who have employed geologists to keep out of water trouble should be ample proof that the geological assistance which the association hopes to furnish will be most valuable.

As an instance of the necessity of such work as the association does, it may be noted that during the past two weeks at least three very puzzling problems relating to deep water have come up in bringing in new wells. These are in outlying territory where it is essential that conditions be quickly and rightly determined so that future development may not be hampered by mistake or territory ruined through ignorance.

The general feeling is that the full force of the association will have its hands full for many months.

Messrs. Forker, Fleisher and Latham have the confidence of the operators, both large and small, and everyone nowadays is willing to give out logs and information. (The commission must regard all information as confidential.) It is, therefore, not unreasonable to expect that the labors of the association will be found to be of the greatest practical value to the producers, and the Driller is sure they start work with the heartiest good will of the entire field.

Pipe Lines Held To Be Common Carriers

The Interstate Commerce Commission decision as to whether or not pipe lines were common carriers, which decision comes as the result of the commission's investigation of the pipe lines of the country to ascertain whether or not the act to regulate commerce impresses the obligations of a common carrier upon a pipe line engaged in the transportation of oil in interestate commerce, has been decided in the affirmative and certain companies, thirteen in all, have been ordered to file with the Commission schedules of their rates and charges. That an interstate pipe line be built over its own right of way and transports only its own oil makes no difference; it comes under the Commission's regulation. The case is presented in a nutshell by the syllabus given by Commissioner Lane, which consists of propositions, and is herewith given:

1. The act to regulate commerce impreses the obligations of a common carrier upon a pipe line engaged in the transportation of oil in interstate commerce, even though such pipe line was built over its privately acquired right of way, and transports only its own oil.

2. Such traffic is not divested of its interstate character by placing the ownership of the pipe line in a different corporation in each state through which the transportation passes, and by transferring title to the oil to each of such corporations contemporaneously with the entrance of the oil into the pipes of that corporation at the State line.

3. Effect of a Kansas statute as to making pipe lines common carriers not considered, as the Federal jurisdiction depends upon Federal acts. If the Federal act is ineffective, a similar statute of an individual State is of no avail.

4 The utilization by a pipe line of the right of way of a common carrier railroad does not impress upon that pipe line the obligations of as common carriers.

5. A pipe line is not impressed with the obligations of a common carrier merely because, by arrangement with the abutting owner, it uses a public highway for right of way purposes.

6. The transportation by the New York Transit Company in New Jersey and by the National Transit Company in New Jersey and Maryland, prior to November 1, 1905, was transportation by these corporations as comon carriers.

7. The transfer by a common-carrier pipe line to a private corporation of a portion of its property theretofore used in its common carrier operations, but not located in the State wherein it was incorporated as a common carrier, does not release that property from the obligations of a common carrier.

8. Certain pipe line companies ordered to file with this commission schedules of their rates and charges.

The companies ordered by the Commission, on its findings, to file with the Commission a schedule of their rates and charges in compliance with the act to regulate interstate commerce, the same to be filed not later than the first day of September, 1912, are:

Oklahoma Pipe Line Company, Prairie Oil and Gas Company, Standard Oil Company of Louisana, Ohio Oil Company, Standard Oil Company of New Jersey, Tidewater Pipe Company, limited, Producers and Refiners' Oil Company, limited, United States Pipe Line Company, Pure Oil Company, Pure Oil Pipe Line Company, National Pipe Line Company, Uncle Sam Oil Company and the Uncle Sam Oil Company of Kansas.

As not a single oil carrying company doing business in one state only is mentioned, and as the investigation was carried on with the intention of finding out if the companies were to be governed by the law regulating INTERSTATE COMMERCE, it seems apparent that no California Oil Company is in any way affected by the decision.

Southern Pacific Case

As we go to press the following is noted concerning the testimony of witness Chas. W. Eberlein in the case of the U. S. Government vs. the Southern Pacific Co.:

Eberlein testified that he had not signed the lease from the Southern Pacific Company conveying title to the Kern Trading & Oil Co. 6,100 acres of land in the Elk Hills district, although he was the head of the Southern Pacific's land department at that time, because E. T. Dumble, president of the oil concern as well as consulting geologist of the railroad company, presented the lease to him for his signature after making an examination of the lands without the knowledge or co-operation of the land office.

The lease, Eberlein said, was drawn in August, 1904, was approved as to form by W. F. Herrin, head of the railroad company's law department and by Dumble as to the assertion it contained that the lands were non-mineral. Herrin's name did not signify anything, as it merely approved the legal form," the witness said, "but Dumble's name was another matter." Eberlein would not say he knew Dumble had misrepresented the mineral character of the land. "I will admit," he said, "that I felt an uncertainty as to what Dumble knew. I may, in fact have had a feeling that Dumble had knowledge of the lands that I did not have." In re-direct examination Eberlein was questioned by Willis N. Mills, special government agent, and United tSates District Attorney A. J. McCormick. Eberlein's consultations with the late W. D. Cornish of New York, vice-president of the Southern Pacific, with reference to the signing of the lease were gone into thoroughly.

Eberlein said that the objection of Cornish to the execution of the lease was that it would establish the character of the lands, and that this would bring about governmental interference. The witness repeated that he had been led by Dumble and George A. Stone, Eberlein's assistant, to make affidavits as to the character of the land, which were afterwards proven to be false.

Counsel for both sides have announced that they have concluded with the testimony of Eberlein, except that they would reserve the right to recall him if necessary.

Strange Type of Oil Found In Louisana

The oil from the large well recently drilled by the Myles Mineral Co. at Pine Prairie, La., is remarkable, according to an analysis made by the United States Geological Survey, in that it contains no asphalt, gasoline, or paraffin wax. The crude product contains a very large percentage of illuminating oil. (Percentage boiling between 150 degrees and 300 degrees C.) In composition the oil stands about halfway between the oil of the Gulf field and that of the Caddo field.

The oil as it flowed from the well contained hydrogen sulphide gas, some of which probably escaped before the sulphur was determined. The amount of sulphur shown in the analysis represents what would usually be found after the oil had been stored in tanks for a short time.

The small percentage of unsaturated hydrocarbons is regarded by Dr. David T. Day, of the Survey, as indicating that the oil may have been changed, with the loss of asphalt, by diffusion through clay in its passage from the saline dome to the sand stratum in which it was found. It will be remembered that Dr. Day conducted a series of experiments some time back, filtering oils through fullers earth to determine what percentage of the different grades was left in the earth and the resultant changes in composition of the "strained" oil. For this reason he is eminently qualified to pass upon the composition of the newly discovered oil.

Patents Recently Granted

The following patents recently granted of interest to the oil and gas trade are reported expressly for THE CALIFORNIA DERRICK by Joseph M. Nesbit, Patent Atorney, Park Building, Pittsburgh, Pa. from whom printed copies may be procured for 15 cents each:

Pipe and cable coupling and casing therefor, G. W. Millar, St. Louis, Mo., 1,028,245.

Pumping mechanism, Augustus Ellsworth, Oilcenter and A. F. Abbott and R. C. Abbott, Bakersfield, Cal., 1,028,338.

Pump rod coupling, A. L. Douglass, Tularosa, N. Mexico, 1,028,689.

Well tubing lock, A. K. McKee, Coalinga, Cal., 1,028,789.

Well pumping mechanism, A. H. Honey, Los Angeles, Cal., 1,028,822.

Well tubing safety appliance, S. A. Guiberson, Jr., Coalinga, Cal., 1,030,084.

Derrick, H. A. Bowers, Jamestown, N. Y., 1,030,640.

U. S. Oil Colliers

It is stated that the House committee on naval affairs has practically determined to provide for the construction of two fuel ships to carry oil for the two new exclusively-oil burning battleships Oklahoma and Nevada.

The city of Tampico is the headquarters for sixty-four companies, firms and individuals operating in the oilfields tributary to this great petroleum shipping point and known as the "Tampico District." These sixty-four firms control in all many millions of acres of lands. More than 300,000 barrels of oil was shipped into the United States from Tampico during May

SUNSET-MIDWAY-McKITTRICK

The biggest and most spectacular fire that ever occurred in the California oil fields was the burning of the big Pacific Crude Oil Company's well No. 1, a gusher of 10,000-barrel capacity, which occurred at the beginning of the month. The big well is located on section 23, 31 23, and was brought in under control, but soon the tremendous pressure behind the oil broke all restraints and the oil was shot a straight 200 feet skyward, coming out with a deafening roar. On June second, about 5:30 in the evening, the well caught fire. How it started is not known. It is thought that the flame or spark that ignited it came from the Buick engine room. Be that as it may, the ground was saturated with oil from the gusher and in spite of all attempts to keep the flames from reaching the well, the fire was uncontrollable. To quote the "Midway Driller," the reliable West Side paper: "A string of pipe was standing in the gusher. Up this a tiny streak of flame crept. Then with a deafening roar the huge column of oil and gas was ignited.

"In a few moments the rig was consumed, all that was left being the iron of the drilling machinery."

The "Driller" went on to describe how the flames spread. The bunk house and cook house of the Buick were destroyed. The No 3 well and two 2,000-barrel tanks of the same company were saved only by the most heroic efforts. The problem of quenching the flames was a tremendous one. It required the steam from more than a dozen boilers, and many hoze lines to conquer the flame and this was done only after many efforts. After four days of increasing anxiety and fire-fighting the well was gotten under control.

The fire was a wonderful spectacle. We quote the excellent report of the "Driller" again, because it is free from unnecessary words and yet describes what happend in a most readable manner:

"The wonderful sight drew hundreds of spectators every night and all were more than repaid. Most of the time the column of flame went straight up, expanding as it arose, until it was lost in a huge black cloud. So great was the force that the column of oil seemed to be a part of the casing standing in the flame for a considerable distance above the ground.

"When the steam was turned on, the flame would die down to a mere speck or entirely vanish. Then a tongue of flame would creep up, and, with a roar, vast flames would shoot heavenward again. At times huge balls or balloons of flame appeared to be thrown clear of the main column, and as they rolled away, a mixture of red flame and black smoke, the sight was beautiful in the extreme. This was increased at night by the reflection o nthe clouds. The heavens were lighted up as by numberless searchlights, and for miles around the nights were almost as bright as day. Another curious freak of the well were the huge rings of smoke, similar to those from a locomotive, but vastly larger, that were blown into the air. The burning gusher was the most wonderful sight of the Midway field. That is saying much, as the field is noted for its gigantic wonders. The Lakeview and other gushers, the Standard and the Honolulu gas well fires were each of colossal magnitude and almost beyond comprehension in their power. But for awe-inspiring grandeur, the burning gusher takes first place."

The exact loss sustained by the Pacific Crude Oil Company through the fire, was $33,000. Ever since the fire was extinguished the well has flowed steadily, making 8,000 barrels of oil per day. The oil is 25 degrees in gravity and the company has sold it to the Standard Oil Company at 45 cents per barrel under a contract calling for 200,000 barrels. The Pacific Crude will start another well immediately.

In recent gas explosions in Mammouth No. 2 well, the former big gusher, five men were badly burned and a property loss of about $12,000 resulted. The rig was completely destroyed and 3,000 feet of four and six inch pipe was practically ruined. Mr. Clarence Berry, President of the Company, had everything possible done for his injured workers.

The Midway Field Oil Co., has a fine well of 27.5 degrees gravity oil. This well is out on the "Flat" east of Maricopa, really in the Sunset field, on section 4, 11-23 and makes the territory most promising. The well came in with a flow of 2,000 barrels per day and at last reports (June 30) had sanded, been cleaned out, and cemented at2754 feet, which is about 10 feet from the bottom of the hole. This is quite an important well. It is three miles due east of Maricopa, and nearby leases are the Kyle-Davies Co., the Metropolitan and the El Camino Oil companies. The oil is the second highest gravity in the Midway-Sunset field and will doubtless bring a very good price. The highest gravity oil in the fields was got in the old La Belle hole, now the California Counties on section 4, 32-23. This oil is 27.8 degrees Beaume.

The Pyramid's bi gasser on 18, 32-25 has sanded up. Preparations to control it are under way.

The Buick Oil Co. got a good well in its last, No. 4, which came in about the 22d of the month, the well doing 600 barrels per day of 24 degrees gravity. The company had expected a larger producer on account of the big ones nearby.

No. 2 well of the Midway Pacific, section 24-31-22, is rigging up. No. 1 is producing 140 barrels daily.

The Midway Gas Company is making good progress with its twelve inch gas line from the Buena Vista Hills to Los Angeles. It is expected that September 15th will see the line completed. Fifteen miles of pipe has been laid from this end, and the pipe is strung ahead of the ditching machine for about twenty miles. At the southern end fourteen miles of pipe is laid between Glendale and New Hall, and the pipe is strung ten miles ahead of the machine. The total lenth of the line will be 117 miles. The company is now repairing the county road at Connors' lane, which was badly cut up by the heavy truckloads of pipe.

The General Petroleum Company is building a camp on their 40-acre tract on section 32-31-23. Material for three rigs is being hauled today. Bonds of the General Pipe Line Company to the amount of $4,000,000 of an authorized issue of $7,500,000 issue, have been sold in New York and Boston. The General Pipe Line Company is closely affiliated with the General Petroleum Company. The pipe line company will construct an oil pipe line from Lost Hills district through the Midway fields to Los Angeles and San Pedro. The pipe line will be 185 miles long, particulars found in March "Derrick" and elsewhere in this issue.

Superintendent Gillette of the Carbo, W. T. M. and T. W. oil companies, on section 25-32-23, reports that the production of these properties for May reached its highest point. A rig for No. 7 well on the W. T. M. is being built. No. 5 is drilling at a depth of 850 feet.

Articles of incorporation were filed June 20th in Bakersfield by the Midway Columbia Oil Company which has its main offices in Vancouver. The company is capitalized for $500,000. The incorporators are T. B. Springer, W. A. Bauer, J. W. Campion, R. M. Dawson, J. Sclater, all of Vancouver. W. H. Waddell, Superintendent of the Canadian Pacific Oil Co. of B. C. Ltd., will have charge of the property, which consists of 80 acres lying between the Canadian Pacific and California Counties holdings. Bids have been received for rig material and machinery. The new company expects to commence drilling in the near future.

The Midway Union, on section 28-32-24, completed its No. 1 well recently at a depth of 2809. It came in with a flow of 500 barrels daily. To increase the production the well will be put on the beam, which is expected to increase the output to 800 or 1000 barrels. The gravity is better than 24 degrees. The company had considerable trouble in finishing the well, due to heaving sands and other causes.

The Boston Pacific got an excellent showing of oil recently. The well is located on section 32, 31-24. The company is at present setting the 4½-inch casing.

The Panama Oil Company was organized recently to take over the Midnight Oil Company, the Daybreak Oil company and the Kelly lease, contiguous properties on the east end of section 30-12-23, Maricopa district. Almost all of the stock o fthe Midnight and Daybreak companies have been exhanged for stock in the Panama.

J. M. Danziger of Los Angeles has filed suit against the Vancouver Midway Oil Company and J. M. McLeod to have contract of delivery for 20 years of the north half of the northeast quarter of section 4-32-23, under date of February 15, 1912, carried out by defendants. Danziger also asks $15,000 damages.

Boston Pacific Oil Co.'s well No. 1, section 32,31-24, Buena Vista Hills has struck oil at a depth of 3370 feet: 4½-inch string. The oil ascends through the water to the top of the well, showing a strong gas pressure. The success of the well encourages other "flat" operators to a great degree and it is expected that much old work will be begun again and new work started.

The Associated's Elk Hills well No. 3 is said to be doing fully 200 barrels daily of 25 gravity oil. Formerly the flow was about 40 barrels—not more. The reason for the increased flow is treatment; well has been swabbed out thoroughly. This is the well that came in about a year ago on section 24, 30-23; the Geological Survey took note of this well as having proved Elk Hills.

A deed of trust has been recorded in Bakersfield for $250,000, conveying from the Adeline Consolidated Oil company to the Slater Trust company the following property in Sunset district:

North half of northeast uarter of northeast quarter of section 3-11-24; northeast quarter of southeast quarter of section 2-11-24; southeast quarter o fsoutheast quarter of section 2-1124; lots 23 and 24 in block 1, town of Maricopa, and all personal property o nthe land.

The Dabney Oil Company has won its suit against the Providence Oil Company of Arizona for the recovery of 110 acres of valuable oil land in the McKittrick district and 160 acres in the Midway district The suit was a complicated affair with many legal tangles in it.

West Side Condensations

The Hale-McLeod Oil Co., on 5-32-23, has increased the production of wells Nos. 7 and 8 by the use of compressed air. No. 7 is producing 500 and No. 8 1500 barrels daily. The California Well Drilling Co. is drilling No. 6 well of the California Midway, on 32-31-23. The hole is down 2750 feet. The 8¼ casing will be set at 2900 feet. Well No 4 of Associated Oil Co., on 34-31-23, which was sanded up for several days, is now in the producing list and flowing over 200 barrels daily of high gravity oil. El Dora Oil Co.'s well No. 2, on 32-12-23, continues to flow over 700 barrels daily. The Southern California Gas Co. has ontracted with the California Well Drilling Co. for gas wells on Associated's sections 22 and 26-31-23. The rigs are up. Midway Five's No. 2, section 5-32-23, was drilled 50 feet deeper, to a depth of 2295 feet and came in anew with a 600-barrel flow of 24.8 degrees gravity oil and sanded up. Canadian Pacific Oil Co.'s well No. 2 on

4, 32-23, has been flowing by heads; gravity more than 24 degrees Beaume. United Crude Oil Co. has established a townsite o nthe S. E. ¼ of section 24, 31-22, embracing 10 acres in all. All drilling rights on this property reserved! The town is located 2½ miles northwest of Fellows. Brookshire Oil Co. is getting ready to drill gas pressure which has caused much trouble. Edmonds Midway is flowing 1,200 barrels daily. Hale-McLeod Oil Co.'s well No. 9 is near completion. Hale-McLeod has 25,000 barrels monthly production. Section 25 Oil Co. has brought in No. 37 at 2240 feet; making 300 bbls. per day. No. 38 is 2,000 feet deep. Company located section 25,32-23. Oakland Midway, section 13, 31-22, has brought in well No. 1 at 2013 feet, with an initial production of 250 barrels per day. Standard Oil's No. 2 on section 36-31-23 is now flowing 1500 bbls. per day; result of deepening; used to flow 250 bbls. daily; high gravity, 26.7 degrees. United Oil Co. sold 39, 447 barrels of oil to Standard during May. United's No. 21 is now below 2,100-foot level. Panama Oil Co. has well good for 800 barrels of 21 degree gravity oil, in section 30, 12-23. Depth 2790 feet; known as well No. 2. National Pacific well No. 1, on section 32, has a well said to be good for 250 bbls. per day. Clear of sand and good oil. The following wells are being drilled by contract:

California Midway Oil Co., section 32-31-23, the 6-inch casing of No. 6 well has been landed in the cement at 3170 feet. Mays Consolidated, section 23-31-32, deepening No. 2, which came in as a gasser a few weeks ago at 3690 feet, Standard tools are being used. The Mays No. 4 is drilling with a rotary at 3500 feet. Midway Gas Co. section 26-31-23, is down 900 feet in No. 1 well. On 22-31-23 No. 1 is being rigged up.

The Miocene Oil Co. section 32-12-23, has contracted with the American Contracting and Drilling Co. to drill well No. 2. Rigging up will commence next week. The United Oil Co. has also contracted with the same drilling company to drill a well, and is now rigging up.

The Fairfield, Honolulu, Eagle Creek, Rock, Pyramid and General Petroleum Companies erected new rigs towards the end of the month.

Lost Hills Active

It looks at present as though Lost Hills will be the most active field in California during the next few months at least. Lost Hills is particularly active at present. The Universal Oil Company gave out the information some time since that it would drill thirty wells in the Lost Hills and has been shipping material into the district since then in a manner to confirm the statement, rig materials and other timbers being on hand for that number already, according to reliable advices. The Universal is the so-called "Crocker-Cameron" company. The Esperanza Oil Company, which is now claimed to be a subsidiary of the General Pipe Line Company, in turn a subsidiary of the General Petroleum Company, which in turn is backed by British money, is entering on an active campaign of development work. The Standard is building or has now completed a new 8-inch pipe line from the Lost Hills field to connect with a main to Richmond. The Associated completed a pipe line into the Lost Hills many months ago. The Independent's pipe line makes the third out of the district. The wells in Lost Hills are averaging very high, 188 barrels per day, just about the highest well average in the State, for any district.

A very peculiar announcement is that the Associated will drill 40 wells on sections 29 and 33, which are Southern Pacific lands and which have heretofore been developed by the Kern Trading & Oil Company. What significance this may have is left for the reader to guess; it may mean that the K. T. & O. is to give up the ghost on account of Government suits now being prosecuted; and it may mean nothing but that the Associated has leased the property from the K. T. & O. Whatever it means, it is causing a great deal of speculation. That Lost Hills is booming at present is proven beyond a doubt by the freight receipts at the town of Wasco, the Santa Fe's closest station on the field; the same have jumped from about $3,000 a month last year to $75,000 for the month of May.

Big Events in California Oildom

Standard Oil Developments

The Standard is tremendously active at present, and active in every department, as far as ascertainable. Between forty and fifty wells are being drilled at the present time, making the Standard the most active single company in the State. It is said now that two new storage reservoirs of 500,000-bbl. capacity each are being contemplated, the same to be constructed in the Kern river district. The company has completed roofing its forty-six reservoirs in Kern river. Great activity is shown by the company at the Richmond plant, where, it is said, an additional investment of $10,000,000 is being made. The $25,000,000 increase in the company's capital stock has been voted and will be issued, the shareholders getting the first opportunity to subscribe for the new issue at par ($100 per share). This brings the capital stock up to $50,000,000, which is close to the firm's assets. Since the last issue of this publication the stock has risen from $160 bid, with $165 asked to $185 bid, $195 asked. The public appears to be waking up to the value of this stock: the best investment on the market today.

Big Oil Amalgamation

The largest oil deal made during the present year in this State was consummated in the early part of June when four of the oldest and most substantial producing properties in the Fullerton Brea Canyon district were consolidated into one concern with a capitalization of $,500,000, —The Columbia Oil Producing Company, the capitalization of which will at once be increased to the figures named above and represents the combined capital of four companies. Those taken in aside from the one named are the Puente Oil Company, the Orange Oil Company and the Pico Oil Company. The new Columbia Oil Producing Company thus acquires about 5,000 acres of land in this remarkably prolific field, most of which is already proven territory, a modern, fully equipped refining plant at Chino, a pipe line extending from the field to the same place, a distance of 25 miles, and distributing stations for crude and refined products at Los Angeles and other points in Southern California. The combined output of the new concern approximates 65,000 barrels a month, 25,000 barrels of which is of high gravity. The companies consolidated, as units, have been good dividend payers, and the merger is made for the purposes of administrative economy. W. B. Scott, the president of the Columbia, will retain the same position in the new concern. The names of W. L. Stewart, general manager of the Union Oil Company, and Chester W. Brown, assistant general manager of the same concern, on the Board of Directors of the new company, indicate that it is to be very closely allied to that organization. The basis of the consolidation is as follows:

Columbia, $1,000,000; Puente, $1.000,000; Orange, $750,000; Pico, $750,000. The name of the new concern remains the same as that of the largest of the merger companies—"The Columbia Oil Producing Company."

Getting Ready To Do A Large Business

It is announced that the Indian Refining Company will be permitted to erect loading racks, plant and oil tanks at the foot of the government breakwater at San Pedro (Los Angeles harbor) which will become a regular port of call for this company's steamers. This means that with the completion of the Panama Canal the Dutch-Shell people, who are back of the Indian Refg. Co., will have a business organization and ports of call extending from England to India and back. The concern is "kicking in" busily in California. It is said that the Dutch-Shell people are also backing the General Petroleum Company, which in turn controls the General Pipe Line Conmpany, so that real competition with the Union and Standard Oil companies, in the carrying and sale of refined oil, will undoubtedly be inaugurated by the Indian Refining Company and its backers, in due course of time.

It is considered probable that the ships of the "Indian" Company will bring refining oils to this country from the East Indies, will discharge here, take on new cargoes of California oils and sell the same elsewhere, engaging in a world wide oil carrying business. The whole matter of future plan and business o fthis concern, however, is at present shrouded in mystery.

Agency Money

The Union will soon pay to such members of the Agency as accepted their offer to purchase all the stored oil, which amounts to about 95 per cent of the Agency membership, the sum of $700,000, for which it received 2,000,000 barrels of stored oil. The American Oilfields Company did not accept the Union's 35-cent offer. This company has approximately 1,200,000 barrels in storage. The payments for the oil will put a majority of the agency companies in very satisfactory financial circumstances.

Seaboard Oil & Transit Company

The following information gained from Seaboard & Transit Co., will undoubtedly be of interest to shareholders:

Officials of the "Seaboard" have just received word in Los Angeles from the Mexican fields that the first well on their property has reached a depth of about 700 feet. This well is being drilled about 500 yards from the Panuco river, practically midway between Panuco and Topila, in what seems to be an exceptionally favorable location. The surface water "cave" has not been shut off with the first string of pipe, and the ten inch casing is now on the ground ready to be put in. The well is going along in good shape, and the whole district is quiet, politically speaking. There has been no trouble from the insurrection anywhere in this district and, in fact, no trouble anywhere in the section of Mexico now being developed by the oil men of California. The material for the new pipe line is being put on the ground and new wells are being started on all sides.

The new well on the Seaboard's Madison property in Kern River has been completed, is now on the pump and producing steadily. This has doubled the output of this property but has not yet reached its full production. Material is on the ground for drilling another well on this property where there is room for about five additional wells. They expect to complete this well within fifty days.

Much of the work of the past two months has been concentrated on improving the wells on the Seaboard's Maricopa property. In deepening well No. 4, after drilling through eighteen feet of shale, another rich oil said was encountered into which the drill has been sent a distance of eighty-five feet. The production of this well has been more than doubled. No. 12 on the same property has been deepened and is showing an increased production. The old air compressor plant, has been dismantled and the first of the individual gas engines is now in place. It is giving good satisfaction. The management expects to accomplish a saving in fuel and water by the new engines, of at least one thousand dollars a month, or enough to keep one string of tools running on new work. All of the oil from this property is taken by the Sunset Monarch Refinery at 45 cents per barrel.

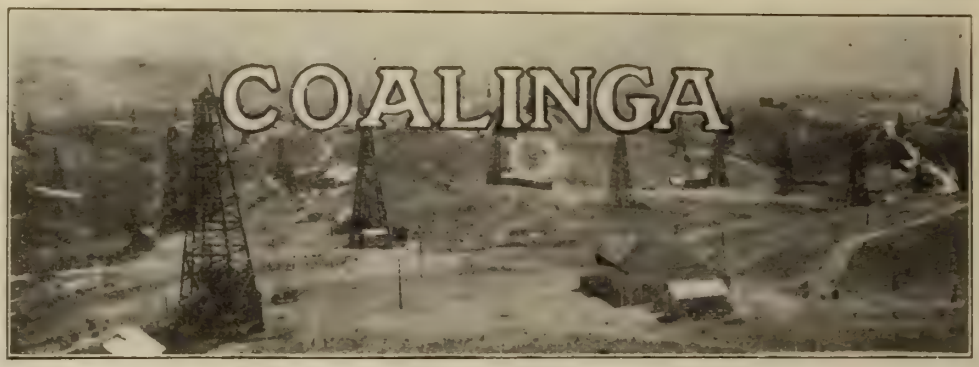
Considerable money has been spent in improving the company's properties, which now produce about 20,000 barrels per month, and the work of getting them in best possible condition will proceed steadily, as the company expects to increase their output to at least 30,000 barrels per month, by careful management.

The management of the Seaboard plan to concentrate development on those California properties which promise the quickest and most profitable returns. The main development work, however, will be done on the Mexican property. This property is surrounded on three sides by large producers and the officials are anxious to bring in a well as quickly as possible. Work will be begun an another well in Mexico next month.

The Anchor Petroleum Co. well in Savage Canyon, near Whittier, has been abandoned; sixth valueless well drilled here.

Los Alamos Petroleum Well in Cat Canyon is now producing 1,200 barrels per day; produced for long time only 400 bbls. daily.

The West Coast Oil Co. has taken complete possession of the Industrial Oil Co.'s property at Olinda. Cost of property, $750,000. Number of wells, 138 producing and 7 drilling; production 2,500 bbls. per day. Acreage, 153; of this 100 acres is owned in fee, the remaining being a one-sixth Royalty base from the Olinda Land Co. The oil is 18½ gravity.



The News from This Field is Written By
GUY H. SALISBURY—California's Best Known Oil Correspondent

WORLD MARKETS AND CALIFORNIA OIL

The recent echoes from the world's centers of trade have disclosed the rapid advance in demand for crude oil in the world's markets; the fuel oil that is employed as a substitute for coal represents a comparatively large proportion of the crude oil produced, possibly as high as 60 per cent. Today the tests made with internal-combustion engines has proven that three time as much energy is exerted as can be obtained from engines driven by steam. From the recent tests made with internal combustion engines, of the Diesel type, it appears certain that the internal-combustion engine will in time supersede the steam engine for most purposes. In Europe, especially England, the rapid progress made in the substitution of the Diesel type of engine to take the place of steam on land and sea, has attracted the attention of the American inventor, who appreciates the economy attained in the use of fuel oil in this connection.

The United States leads the world in the production of crude petroleum. The figures are complete for 1910. The United States is credited with 63.521 per cent of the total yield of the world, the production for 1910 being 27,940,806 metric tons, or, in our language, 195,585,642 barrels. Russia comes next with 67,195,128 barrels; British India with 5,661,558 barrels; Mexico with 3,110,611 barrels and Canada with 301,903 barrels. An eminent writer on this subject says: "If the whole of this crude petroleum were employed as fuel in steam raising, it would not replace, allowing for its higher thermal efficiency, much more than five per cent of the world's output of coal, while if used in internal-combustion engines it would be equivalent, as a source of power, to about fifteen per cent of the coal." It must be remembered that only a small proportion of the crude petroleum can be regarded as available for use as a source of power; the greater portion is in demand for refining purposes and for the various lubricants for machinery, and other by-products. The present activity in the fields is only the start of what must come, the world over, and the shortage in crude oil is continually increasing, the greatest cause for this being the rapid increase of consumption and the working out of many of the old fields. This, no doubt, has contributed to the recnt energy shown in the California fields. Within the next six months the actual development work will be noticed in our field, in the opinion of men who have studied the situation as it really exists today.

Mohawk Oil Comjany

The Coalinga Mohawk Oil Company, section 12, 20-15, are building the heaviest standard drilling rig ever built in this State; heavy enough to go 6000 feet if found necessary. There will be 44,000 feet of lumber in the rig; 7 1-2 inch rig irons, base 21 ft. 5 inches, 88 foot derrick, extra large sand reel, 5 1-2 inch by 10 foot shaft, friction and break pully, one wheel for friction, one wheel for break. This rig will be used to drill in well No. 5. This expenditure for such a heavy rig, would suggest that the company will drill to a lower sand. It has been claimed by men of large experience in the oil well business that the "reading" of the formation suggests a lower sand and that at the lower depth a very light oil would be entered. The future of this field is in good hands. With deep wells we feel that the life of the field will be prolonged for many years; that we today are only experiencing the imprint of what is to come: "Coalinga, the banner field of the West."

Parkfield Inviting

G. W. Warner, of the Kings County field, has been investigating the oil conditions through the Parkfield District. Work about the Thompson Camp, on section 13, 23-14, is progressing nicely. Well No. 1 was drilled in about 350 feet back of the outcropping. The well was drilled to 155 feet; the first oil sand is 100 feet thick no casing in the hole; the formation being a hard, sandy shale over the oil sand, which stands up well; no water strata entered. Well No. 2 was drilled 254 feet to the top of the oil sand, each well shows up nicely. The oil is 16 degrees gravity, near the outcrop. The general pitch of the sand is about 30 degrees and towards the outcrop, and anywhere a hole was dug with a shovel it soon filled with oil. The sands all seem to pitch under the hills, and the general appearances are very inviting. F. H. Thompson, the pioneer in production, has built a good wagon road into the camp from Parkfield.

Hydraulic Drilling Company

The Hydraulic Drilling Company have purchased the south half of the south half of section 1, 21-14 from Mr. T. A. O'Donnell, and associates, the price paid not being stated. The company will develop the property in the near future. Well No. 1, onsection 12, 21-14, is 850 feet deep wiht 8 1-4 inch casing; well No. 2 was finished up at 360 feet, 6 1-4 inch casing; Well No. 3 was finished up at 384 feet, 6 1-4 inch casing, both wells will be put on the pump immediately. This company has made a good record for a new comer, as they commenced operations in this field only last March.

British California Oil Company, Ltd.

The British California Oil Company, Limited, section 16, 20-15, have reached the oil sand, with well No. 1 at 4,350 feet with 4 1-4 inch casing. The drilling bit passed through several layers of sand carrying oil alternating with hard shells. This well is located in the center of Pleasant Valley, a little over one mile west from the Coalinga Syncline. The attention of oil men is centered on this well, as the sand at this depth will carry a light gravity oil, and will prove up a very large tract of territory; deep but valuable on account of the quality and gravity of oil produced.

American Petroleum Active

The American Petroleum Company, section 6, 20-15, are increasing the development work on this section. On the west line one new rig has been completed and is ready for the drillers, and material is in place for two more standard rigs. On the north line one well is spudding in and one rig is being rigged up. On the south line three wells are drilling. The company finds it necessary to drill new territory to keep up production that they may meet the requirements of their contracts.

Amity Oil Company

The Amity Oil Company, (formerly the Fresno-San Francisco) section 1, 20-14, are cleaning up the property; some of the wells will be cleaned out and production increased. There are eight completed wells upon the property; well No. 9 will be drilled in the southwest corner of the property. G. B. Foster is superintendent.

Azores Oil Company

The Azores Oil Company, section 26, 21-15. Well No. 1 was cemented at 3,965 feet some time ago and was again cemented last week at 4,050 feet. Considerable oil has shown up through the water while preparing to cement off the water. The company has worked faithfully at this well for some time; the difficulty has been to shut off the water above the oil sand entered, that a test might be made and superintendent McRae believes he has the job done this time.

United Development Co.

The United Development Company are installing two 80-horsepower boilers in the boiler plant on section 19, 20-15, this will give the company a battery of three "80's", sufficient to handle several wells. On section 17, 20-15, two 40 horse power boilers are being installed for well No. 2, on the southwest quarter.

Guaranty Oil Company

The Guaranty Oil Company, (formerly the St. Elmo, Arizona and Merrill) section 14, 20-14, have resumed operations; the work is in charge of Chas. Bowman. The wells will be cleaned out and put on the beam, one or two of them will probably require re-drilling to improve the production.

Vancouver-Coalinga Syndicate

The Vancouver-Coalinga Syndicate, section 28, 25-18. Well No. 1 is 250 feet deep, 12 1-2 inch casing. Formation, recomposed sand, broken up. The two water wells drilled are supplying sufficient water for all purposes.

Washington Oil Company

The Washington Oil Company, section 2, 21-14 well No. 6 has been finished up at 350 feet with 6 1-4 inch casing. The fluid is coming in in good shape and will equal the other wells on this property, the production of which averages about 60 barrels per day. The oil is of a fine lubricating quality.

Limited Will Drill Nine Wells

The California Oilfields, Limited, will start work on nine new wells at once. Some of thes ewells will be drilled in on the south line of section 21, 19-15 offsetting the Standard wells, and the balance will be distributed over the property on the east side.

Coalinga Midland Oil Company

The Coalinga Midland Oil Company, section 10, 19-15, is reported to have secured financial assistance and will now carry the hole down to the pay sand. The company had a very good showing when the work was shut down about one year ago. The 8 1-4 inch will be made to complete the well with 6 5-8-inch pipe.

Marathon Oil Company

The Marathon Oil Company, section 13, 25-18, Devils Den District, well No. 1 is 1,300 feet deep with 10-inch casing. Formation, brown shale, constantly showing oil through the shale; indications only; conditions encouraging.

Spokane-Coalinga Oil Company

The Spokane-Coalinga Oil Company section 2, 21-14, well no. 6 is 200 feet deep, 8 1-4-inch casing. The pipe will be landed at this depth and the water shut off; the 6 1-4-inch will be carried into the pay sand.

Lacey Oil Company

The Lacey Oil Company, section 34, 25-18 Devils Den District, well No. 1 is 1,750 feet deep with 8 1-4-inch casing. Formation, blue shale and clay; considerable gas showing up through the shale.

The Oil Well Supply Man's Page

D. & B. PUMPS
Concluded By S. K. Burgess

D. & B. Pumps are manufactured in modern shops under an efficiency system which requires more accuracy in size, cuts and machinery than on paper or in theory. A perfect pump is more to be desired than a perfect stock record.

The end fittings, called the **Head** and **Shoe,** are malleable iron, cast and annealed in the latest improved manner by a firm with a nation wide reputation for high quality work. The process of annealing renders these castings malleable and able to withstand all jars, knocks and strains incident to the life of an oil well pump.

The **Outside Casing** of the pump is standard pipe.

The **Liners** are cast from clean superior quality pig iron alloyed with other ingredients making an iron casting harder, and with a toughness and durability superior to the so-called semi-steel. After casting, an analytic test is made of the iron, the chemist's report determining whether the heat be accepted or rejected. After cooling, the liners are removed from the molds, the cores taken from them and the liners are passed to the receiving platform for further inspection. Entering the machine shops they begin their round of turning, facing, boring, reaming and grooving. The interior of the finished liner is true to 2-1000 of an inch, which is made possible by our improved system of boring and reaming.

The advantage in finishing small castings as to accuracy and quality over large castings are many; and the D. & B. is making use of this natural handicap to make each piece as nearly perfect as possible.

The **Plunger** is turned from special extra heavy steel tubing. Here also accuracy is the keynote; the plungers all being ground to exact size, are all interchangeable.

The various pieces pass from one machine to another, progressively working their way into the Assembling room. Here the use of special tools has made it possible to fit six liners together in such a way that joints cannot be detected even by the most careful scrutiny.

The Liners join together, the Plunger fits to a dot, the Head and Shoe are tightened and the finished product is ready to subtract the oil from its lowly abode.

"The Story of Natural Gas"

The Welsbach Company have sent us their interesting pamphlet, "The Story of Natural Gas," which, in view of the fact that natural gas is at the present time so very much in the mind of the public, will be of interest to review.

The pamphlet details that natural gas, like gunpowder, was first discovered and used by the Chinese, who, centuries back, found it issuing from cracks in their ancient salt mines, and learning that it was combustible (probably through accident) they contrived by means of crude pipe lines of bamboo to convey it to their villages, where it was used for burning purposes. How the pieces of bamboo were joined together, unless by mud or pitch, or possibly asphaltum, which was known in the far East as early as 5,000 B. C., the pamphlet does not state. The largest known gasfield in the world today, extends over western Pennsylvania, part of Ohio, Kentucky, West Virginia and Southwestern New York. The pamphlet does not mention the newly discovered Bow Island, Alberta field, and makes no note of the recently developed gas region in the Buena Vista hills in our own State, although California is included in a list of the States where commercially important gas fields exist. These are given as: Illinois, Indiana, Kansas, Oklahoma, Texas, California, Missouri, Utah, Colorado, Wyoming and Tennessee. Natural gas was first discovered in the United States in the year 1820, near Fredonia, N. Y. In 1821 a small well was sunk here and the gas piped to the village for illuminating purposes. In 1824, when La Fayette visited the United States, Fredonia accomplished in his honor what was then a monster illumination, by means of this supply of natural gas. The use of the product spread rapidly and became general over the fields where it was found, until in 1873, natural gas was piped from a well in Armstrong County, Pa., to glassworks there, which was the first time it was used modernly as a fuel for manufacturing purposes. The value of the natural gas consumed in this country in 1906 was $46,000,000 and is at present said to be greater than that. When the California product is being used in Los Angeles and more widely on the coast from the Santa Maria field, the increase in the value of the gas product on this coast will doubtless do much to offset the decline in the East.

The pamphlet states that natural gas used as an illuminant in connection with **Welsbach** incandescent gas lamps is cheaper than any other known means of obtaining equal light; that the natural product produces greater incandescence in mantles than any other gas available for commercial use; that their mantles and appliances are without any comparison for use with natural gas. The pamphlet is profusely illustrated with cuts of different grades and styles of both mantles and appliances and should be of geniune interest and value to those contemplating the use of natural gas, or those already using it.

Miscellanea

The "Renown," the largest oil carrying vessel on the great lakes, which has a capacity of 1,500,000 gallons, is 394 feet long, 52 feet wide and 25 feet deep, was recently launched from the Lorain, Ohio shipyards and will do duty for the Standard Oil Company of New York.

The Standard Oil Company imported 25,000,000 gallons of oil in Hong Kong, China, during 1911. This was about 53 per cent of the total import in that country.

American interests have secured concessions in the Dutch East Indies and have organized a company to compete with the Shell-Royal Dutch combine there. It is alleged that the Standard Oil interests are the backers of the new corporation and that the latter is to be used as a wedge for a "price-war" to gain a firmer foothold in the far Eastern markets.

The Potrero del Llano well, in the famous Mexican field of that name, situated about 100 miles southeast of Tampico, is the largest in the world's history. Its daily output for three months never varied and at the end of that time, after producing over 10,000,000 barrels of oil, it was throttled down to 25,000 barrels production per day, but is still able o produce at the former rate and would do so for an indefinite period if allowed to flow. This one well can, therefore, produce more than 40,000,000 barrels per year, which at 50c per barrel would bring $55,000 daily, more than $20,000,000 per year. The well is owned by the Mexican Eagle Oil Co. of which the famous Lord Cowdray, otherwise known as Sir Weetman Pearson, is president. The average production is in excess of 110,000 barrels, when the well is allowed to flow unrestrained.

The Vacuum Oil Co. has shipped 100,000 cases of naphas, kerosine, etc., to Hobart, Tasmania, from New York.

London is suffering a "motor spirit" or gasoline famine: the result of recent strikes by dockmen.

The Burmah Oil Co., operating in Upper Burma, paid 15 per cent on its common stock for the past year's operations. This is 5 per cent less than was paid on the common for the preceding 12 months.

French West Africa is being exploited for oil by two companies, the "Societe Francaise de Petrole" and the Takinta Oil Co." The two concerns control about 20,000 acres all old. There are two wells, 150 and 400 feet down, respectively. A heavy gas pressure and some oil has been met with. "Niggers" do the heavy work. No results yet.

Canada's oil production fell from 315,895 barrels in 1910 to 284,434 barrels in 1911. The only fields of consequence are in Ontario. The productions shows a continuance of the decline during the first half of 1912.

Out of 691 engines in use on the railroads of Roumania, 595 are oil burners, consuming about 180,000 tons of oil per annum.

Peru shipped 100,000 tons of crude and refined oils to the United States last year.

It is believed that State lands in Montmorenci County, Michigan, are petroleum bearing and in view of this fact the Standard Oil Company is seeking to lease and develope same.

Dividends In May

At the last minute it was found that there was insufficient space in the last issue of the "Derrick" to incorporate the dividend list for May therein. The dividends paid by the listed California companies aggregated $621,068.56. In addition the Mexican Petroleum Company, the big Doheney concern that is controlled entirely by Californians, paid $400,000 in one lump bringing the total for May to $1,021,068.56. Including disbursements by close corporations which are not made public, it is probable that the May dividends reached $1,500,000.

Disbursements of dividends for May were as follows:

	$1.00	$ 100,000.00
Amalgamated	.025	8,057.50
Caribou	.015	15,400.00
Central	.015	7,500.00
Claremont	.015	6,992.26
Columbia	.050	3,500.00
Del Rey	.050	30,000.00
Fullerton	.015	7,500.00
Home	.10	1,000.00
Homestake	.025	12,500.00
Monte Cristo		5,000.00
Mount Diablo	.005	2,500.00
New Pennsylvania	.010	5,000.00
Parafline	.010	10,000.00
Record	.015	4,500.00
Rice Ranch	.10	5,000.00
San Fran & McKittrick	.020	4,000.00
Sauer Dough	.50	20,000.00
Section 25	.005	5,000.00
State Consolidated	.006	9,000.00
Traders	.006	183,387.50
Union	.006	90,767.60
Union Provident		
United Petroleum	.005	48,450.60
Western Union	.010	10,000.00
W K	.03	15,000.00
Total California Companies		$ 621,068.56
Mexican Petroleum Ltd. pfd.	.002-3	80,000.00
Mexican Petroleum Ltd. common	.01	320,000.00
Total all companies		$1,021,068.56

Brief News Items of Interest

The Belridge Oil Co. has a new 300-bbl well on section 34, 28-21 McKittrick.

The Lubricating Products Company, a new refining concern recently organized in San Francisco and headed by the Crocker interests has purchased a tract of land on San Francisco Bay in Santa Clara county, about thirty miles south of San Francisco, and will at once erect a plant for the manufacture of their products. The company will begin in a small way with a plant capable of handling 300 barrels a day, and will increase the capacity as the business grows.

W. P. Hammon, who represents a large English syndicate that has been buying land and producing properties in nearly every oil field in California, has exercised his option to buy 2,000 acres of land in the Cat Canyon district east of the Santa Maria field. A well recently brought in on the John Bell tract, the land in question, is showing for a 250-barrel producer and proves up a large area. The land lies southeast of the Union and Palmer properties, both of which have been proven to be very productive. The price paid for the 2,000 acres is said to be approximately $1,500,000.

The general Petroleum Co. is said to be about to drill twelve wells on its recently acquired property in the Fullerton field.

The Associated Oil Co. has just completed its 3,000-foot well on section 13, 26-27 in the Lost Hills district and its test well on section 27, 27-20 in the Belle Ridge district, also 3000 feet deep. No results.

Brief News Items Of Interest

The Wildcat San Juan well of the Union Oil Co. located in La Habra Valley near Coyote Hills, met with an accident at a depth of 4,680 feet, and will be abandoned.

The Birch and Brea Canyon oil companies have each erected a rig in Brea Canyon.

The Yriarte well of the Standard Oil Co. has not yet produced any oil.

The Petroleum Company's well on the Gilman ranch struck the amalgamated's sand at 3,040 feet, with a rotary, and got what looks like a splendid producer.

The Premier Oil Co.'s No. 1 well, (Coalinga) has been deepened and has obtained a new sand, into which the well was drilled 85 feet, after which it was operated and made 250 barrels per day. For the last five years it has averaged from 100 to 150 bbls. daily. The company will now proceed to deepen all their remaining wells. The new sand adds an immense value to the property.

Col. Tim. Spellacy and J. D. Thompson have sold 100,000 barrels of their Mexican product from the new Topila Petroleum Co. well, for 40 cents per baorrel, which will mean $40,000 to the company. The oil is sold to the Waters-Pierce Co. The Topila well is a splendid one, good for 3,000 bbls. per day.

Combined Oil Co., has hired Wm. Forstner, the well known geologist, to make a report on their property and suggest methods of speeding the bringing in of their well on Sulphur mountain, Santa Paula.

The Standard Oil Co.'s big asphalt refinery at Richmond is said to be idle at present. This refinery is capable of turning out 100,000 tons of asphalt per annum. The company is now selling its product at $10.50 per ton at the plant.

The Union Oil Co. is enlarging its asphalt refinery at Oleum so that it will have a capacity of about 100,000 tons per year.

The Kansas Crude Oil Co., property which is about ten miles west of Los Angeles, near Beverly Hills, has a good well. The sand was reached at 3,000 feet; penetrated 75 feet; oil 23 gravity; well not yet completed.

The State Board of Equalization has reduced the taxes on oil corporations of the State, about 25 per cent, although in individual cases the tax was raised. The Standard's tax last year amounted to $31,450; this year it amounts to 52,370. The Union's was reduced fully $20,000. The general reduction is of great help to many smaller corporations and the news of same was joyously received.

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SANTA MARIA

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BY W. D. MALTMAN

Palmer Union Oil Company

The production of the Palmer Union is gradually coming up. The wells in trouble are gradually being cleaned up and within a short time three additional wells should be on production. After several attempts to get the tubing and pumpnig barrel out of the famous Palmer No. 1, the company decided to cut the casing out at the bottom of the 8-inch and re-drill the lower portion of the well; which work is nearly completed, the crew having already drilled through 200 feet of oil sand. They expect to perforate the well and put it on the pump within a week. The gas pressure in the well is very heavy and it is hoped that it will again flow, when fairly opened up, as formerly.

Many Strings At Work

Much activity is being evidenced all over Santa Maria, old field as well as new. On the Pinal old field property three strings of tools are now at work; on the Dome, four strings.

The Rice Ranch is running three strings of tools and has erected two new rigs. The Western Union is running two strings; Pennsylvania, one. In the last three years the production of Rice Ranch has been brought up from approximately 6,000 to 25,000 barrels per month; the Western Union increasing during the same time from 12,000 to 35,000 barrels monthly.

In Cat Canyon Palmer No. 4 is said to be making 1500 bbls. a day. No. 2 is producing 250 bbls. daily. Los Alimos No. 1 is making 650 barrels daily. Santa Maria Oilfields has two wells on production, making about 600 bbls.; one doing 250, the other 350. The company is said to be running six strings at present.

The Union is installing a gas compressing plant which will be added to from time to time until it has at least 1,000 horse power at work extracting gasoline from the gas. It is said the Union has 17,000,000 feet of highly saturated gas escaping daily from its wells in the old field. The Pinal-Dome has started up its 80-horse power compressor. The Western Gasoline Co. is running and has been for three months on the Hall and Hall property, as chronicled in the March Derrick. The Santa Maria gas is the richest in gasoline of any field in this State—as high as four gallons of gasoline being extracted from 1000 cubic feet of gas. A compressing plant is being installed on the Rice Ranch Oil Co.'s property and another is to be installed on the property of the Western Union.

Pinal - Dome Oil Company

Pinal Dome Oil Company, a re-incorporation of the two big companies under one organization, is the culmination of a long affiliation between the two. These companies own large properties in the main field with a production of 125,000 barrels of 25 degrees gravity oil monthly. In addition the Dome held 160 acres adjoining the Palmer on the old Blochman property, which is conceded to be the best producer of the Cat Canyon region at the present time. Both in addition had large potential areas undeveloped as well as water frontage, and other facilities for marketing oil. The new combination will continue under the same management and will float an issue of $500,000 in bonds to build up the new corporation to one of the largest operators in the Santa Maria field. The money will be spent for development and marketing purposes.

Bradley Canyon Oil Company

The Bradley Canyon Oil Company, back of Fugler's point, at the extreme northern end of Cat Canyon, has passed through the first sand encountered at 470 feet and is now drilling in shale at 700 feet with 10-inch, having shut off the surface sands with the 12 1-2-inch pipe. The formation compares with that of the producing belt of Cat Canyon except that the shale and first sands were found at a much earlier depth and from indications the territory is shallower. The outlook for a well is very promising. A production at this point would have the effect of extending th Cat Canyon area from the new well in the John Bell tract, eight miles north-west, through the Palmer, Dome and Union properties, and would open up a large proven territory.

Summit Oil Company

The Summit Oil Company, north of the Palmer in Cat Canyon, has been held up by a series of difficulties, the last of which is trouble with cementing off the water with the 6-inch casing before finishing up in the oil sands at 2700 feet. The oil showing is very promising and a good well is anticipated after the hole is put in shape.

Princess Oil Company

The Princess Oil Company, operating in the Tepusquet, has started drilling again after a delay since the first of the year and is now down 2780 feet with 8-inch. The hole is in good condition and shows a quantity of live gas in the formation drilled into.

Merchants Oil Company

The Merchants Oil Company is working at a depth of 2800 feet just past the first sand. A lost string of tools has held up making new hole for some weeks.

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GEORGE TOURNY, Manager.

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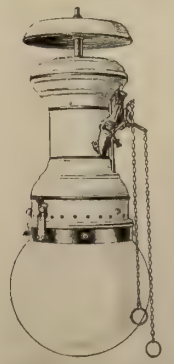
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LATEST QUOTATIONS ON THE SAN FRANCISCO STOCK EXCHANGE

While the San Francisco market for oil shares remained dull the greater part of June, there were quite a number of sales during the last few days of the month. Sad indeed was the fate of Associated on June 29, when the low point of $43 was bid. It is evident that the public takes little stock of the promise of Associated's new president that dividends will shortly be declared. These dividend rumors have really been so persistent for the last five years that they no longer rouse the public to a storm of purchasing. To continue, however, with the live ones: They are bidding $75 for Amalgamated, Associated's strongest subsidiary. Palmer and Palmer Union have been among those active. Coalinga National at 21c.; Sauer Dough at $1.25; Turner at $1.00 and Sunset Monarch at $1 were the sellers. Otherwise there was mainly a desultory and quiet bidding.

Following is a list of the stocks recently quoted and prices bid and asked.

	Bid	Asked
Amalgamated Oil	75 00	80 00
Associated Oil Stock	43 00	44 00
Caribou	91	
Claremont	65	
Coalinga Central	20	
Coalinga National	21	
De Luxe	80	
Empire	1 25	
Maricopa 36	61	
McKittrick	09	
Monte Cristo	1 30	
National Pacific	04	05
New Pennsylvania Petroleum	00	
Paraffine	50	
Palmer	53	
Palmer Union	30	
Premier		50
Republic	32	
Silver Tip	85	93
S. W. & B.	20	25
Sterling	1 55	1 70
Sunset Monarch		1 10
Turner	90	1 00
W. K. Oil Company		2 25

LOS ANGELES QUOTATIONS

As usual, Los Angeles shows a keener interest in oil than does San Francisco. There is generally (and naturally) a better tone to prices of any listed stock in the southern metropolis, as is evidenced by the following list of quotations:

Amalgamated Oil	78 50	80 00
American Crude Oil Company	14	
American Petroleum Company, (Com.)	48 00	49 50
Associated Oil	44 00	44 75
Bear Creek Oil and M. Company		75
Brokshire Oil		65
California Midway Oil Company	23	23
Central	1 40	1 60
Columbia	1 00	1 12
Continental Oil		35
Enos Oil Company		07
Euclid Oil Company		37
Fullerton Oil	2 00	
Globe	05	06
Jade Oil Company	09	12
Maricopa Queen Oil Company		30
Mascot Oil Company		75
Mexican Petroleum Ltd., "Pfd."	96 50	99 00
Mexican Petroleum, Ltd., "Com."	68 75	69 25
National Pacific Oil Company	02⅝	
Nevada-Midway Oil Company	12	
New Pennsylvania Oil Company	50	
Olinda Land Company (Oil)	37	
Palmer Oil Company		75
Pennsylvania Midway Oil Company	07¼	
Piru Oil & L. Company	26	
Rice Ranch Oil Company	1 27	
Trader's Oil Company		80 00
Union	97 62½	97 75
Union Provident Company	97 12½	98 00
United Petroleum	97 25	97 75
United Oil Company	29½	30
Western Union		100 00
White Star Oil Company		25
Yellowstone Oil Company		08

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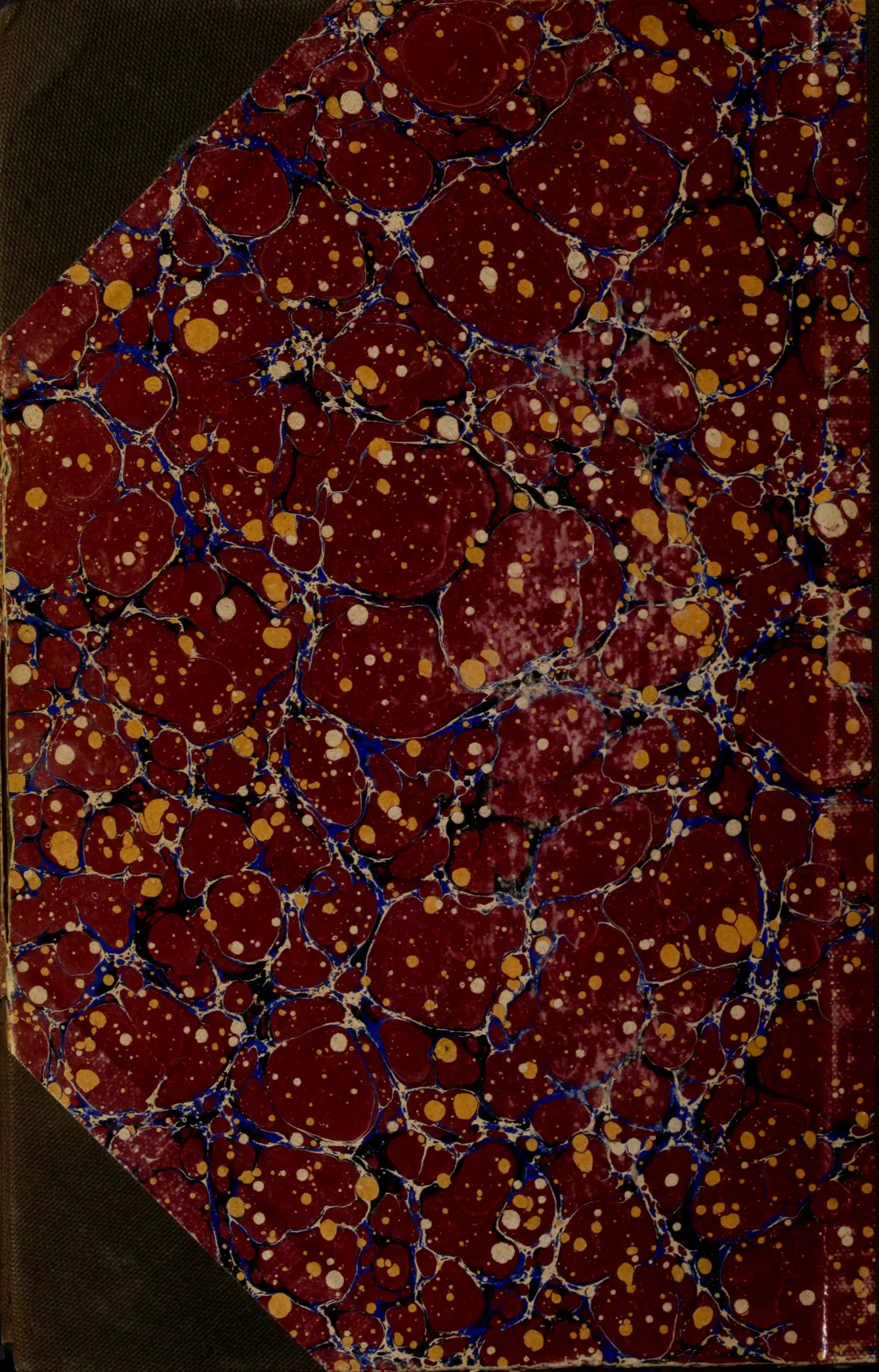
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